The Local Implementation of the Sale of Food and Drugs Act, 1875

Thesis

The Local Implementation of the Sale of Food and Drugs Act, 1875

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Janet Brian: Abstract of PhD Thesis

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This thesis investigates the implementation at local level of the Sale of Food and Drugs Act, 1875. The Act, an important milestone in food reform, was introduced in an attempt to control the adulteration of food, drink and drugs which previous legislation had failed to achieve.

At central government level, the Local Government Board was responsible for overall administration of the Act, while daily implementation was the responsibility of local governing bodies. The success of the 1875 Act therefore depended on effective local implementation. Key to the Act was the collection of samples from retailers by designated inspectors and the analysis of these samples by official public analysts. Local authorities were responsible for the appointment of public analysts and inspectors and other aspects of the daily working of the Act. The way these responsibilities were discharged had a very real effect on the outcome of the legislation.

Many local authorities failed to implement the Act and the Local Government Board proved ineffective in enforcing compliance. Public analysts and inspectors were also hampered in the daily administration of the Act by many practical constraints, as a result the effectiveness of the 1875 Sale of Food and Drugs Act has to be re-evaluated.

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Abbreviations

BL — British Library

BMA — British Medical Association

BMJ — British Medical Journal

ERO — Essex Record Office

LGB — Local Government Board

LMA — London Metropolitan Archives

MOH — Medical Officer of Health

SPA — Society of Public Analysts

TNA — The National Archives

Introduction

The Sale of Food and Drugs Act, 1875 was introduced in England and Wales, Scotland and Ireland in an attempt to control the adulteration of food, drink and drugs. With some amendments, this legislation formed the basis of British food law until the mid-twentieth century.[1] Adulteration was not a phenomenon peculiar to the nineteenth century as it had been practised since earliest times. However, by the middle part of the nineteenth century, investigations spearheaded by medical reformers indicated that adulteration had become so prevalent that it had serious medical and economic implications. Adulteration acts legislated in 1860 and 1872 had done little to effect an improvement, and reformers hoped that the extended provisions of the 1875 Act would provide the legislative control necessary to do so.[2] At central government level, the Local Government Board (LGB) was responsible for overall administration of the Act. Key to the new Act was the collection of samples from retailers by designated inspectors and the analysis of these samples by official public analysts. Local authorities remained entirely responsible for the appointment of inspectors and public analysts and could decide whether, or not, to make appointments as the Act remained permissive on this issue. Allowing so much scope for local initiative, or lack of it, was an important feature of the Act which affected its impact. While the 1875 Act also covered the adulteration of drugs this is a subject that raises a number of

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[1] The Sale of Food and Drugs Act, 1875, (38 & 39 Vict. c. 63).
[2] Adulteration of Food and Drink Act, 1860, (23 & 24 Vict. c. 84). Adulteration of Food, Drink and Drugs Act, 1872, (35 & 36 Vict. c. 74).

separate issues, including changes in pharmacological understanding and therapeutic drug use, and will therefore not be discussed in detail in this study. It is the implementation in England of the 1875 Sale of Food and Drugs Act at local level, especially as regards food adulteration, that will be the focus of this thesis.

While many broad histories of food make passing reference to the adulteration issue, until comparatively recently there was little in the way of authoritative work on the subject.[3] One exception is the work of John Burnett who, in his studies of dietary history in England, sees adulteration as an important part of this history. In a number of works he provides a comprehensive assessment of the adulteration issue and discusses in some detail why adulteration became so prevalent in the nineteenth century. He also examines aspects of the reform movement and in general sees the introduction of the 1875 Act as an effective measure in the control of adulteration.[4]

A different perspective has been provided by Ingeborg Paulus who has viewed the adulteration issue within the framework of the sociology of law. Her work focuses on the development of state regulation to control adulteration by

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[3] P.J. Rowlinson, 'Food Adulteration: Its Control in 19th Century Britain', *Interdisciplinary Science Reviews,* **7**, 1982, pp. 63-72. John Postgate, 'Sticky breeches and poisoned lozenges', *New Scientist*, **128**, December 1990, pp. 31-33. E.J.T. Collins, 'Food adulteration and food safety in Britain in the 19th and early 20th centuries', *Food Policy,* **18**, April 1993, pp. 95-109. While Collins provides a more complete analysis of the adulteration issue and attributes much of the improvements in food quality to advances in food chemistry, on the whole these articles stay close to a narrative of administration.

[4] John Burnett, 'The Adulteration of Foods Act, 1860', *Food Manufacture*, November 1960, pp. 479-482. *Plenty and Want*, (third edition) 1989. *Liquid Pleasures*, 1999.

examining the pattern of reform cycles, the developing character of legal control and the efficacy of resulting legislation.[5]

On balance authors such as Burnett and Paulus consider that the 1875 Act was effective in reducing adulteration. John Burnett for example feels that the Act brought about a 'spectacular improvement in the quality of many basic foods'.[6] However, my detailed investigations of local implementation raise issues about the efficacy of the Act and indicate that this view may be open to question. Problems implementing many aspects of the legislation indicate that far more adulteration occurred than was recorded in official statistics. This view is supported by the work of Peter Atkins who, in his extensive studies of the health implications of contaminated and adulterated milk in Victorian England, identifies many problems that made effective control of milk adulteration so difficult.[7] Atkins urges 'caution' when using official statistics on adulteration and discusses the many difficulties associated with milk sampling, as well as other important issues, that show why it would be unwise to rely solely on these statistics as an accurate reflection of declining adulteration and the effectiveness of legislation.[8]

Similar doubts about the reliability of official adulteration statistics have been expressed in the most recent investigations into the adulteration issue which

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[5] Ingeborg Paulus, *The Search for Pure Food,* 1974.
[6] Burnett, 1989, p. 232.
[7] P.J. Atkins, 'The Growth of London's Railway Milk Trade, *c.* 1845-1914', *The Journal of Transport History*, **4**, 1978, pp.208-226. 'The retail milk trade in London, *c.* 1790-1914', *Economic History Review*, 2nd series, **33**, 1980, pp.522-537. 'Sophistication detected: or, the adulteration of the milk supply, 1850-1914', *Social History*, **3**, 1991, pp.317-339. 'White Poison? The Social Consequences of Milk Consumption, 1850-1930', *Social History of Medicine*, **5**, 1992, pp.207-227.
[8] P.J. Atkins, 1991, p. 326.

have been undertaken by Michael French and Jim Phillips. In *Cheated not poisoned?* (2000) these authors use a comparative discussion of the emergence of American food and drug legislation to analyse the evolution of food regulation in the United Kingdom between 1875 and 1938. They argue that reformers proposed food regulation in the 'public interest' and propose the concept of 'capture' in which various 'interest' groups might shape resulting legislation in their own interests. Helpfully, they also discuss the various official enquiries and legislative enactments from the 1870s that concerned the adulteration issue.[9] In this, and other works, these authors reveal the various weaknesses inherent in the early legislation.[10] One area of concern was the sample collection process. French and Phillips suggest that because of this particular weakness, official figures for adulteration 'may not be entirely reliable'.[11] While these authors focus on Edwardian Scotland and draw on official statistics on adulteration that were published in the late-nineteenth and early-twentieth century, this thesis will show that this weakness in the sample collection procedure was also an issue in England and earlier in the nineteenth century.[12] The thesis will go further by demonstrating that there were in fact many constraints, both on the sample collection process and other aspects of local implementation that limited the effectiveness of early adulteration legislation, and the 1875 Act in particular. This would suggest that, during the nineteenth century, far more adulteration may have occurred than was recorded in official statistics.

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[9] Michael French and Jim Phillips, *Cheated not poisoned?*, 2000.
[10] Jim Phillips and Michael French, 'Adulteration and Food Law, 1899-1939', *20th Century British History*, **9**, 1998, pp. 350-369. Michael French and Jim Phillips, 'Sophisticates or Dupes? Attitudes toward Food Consumers in Edwardian Britain', *Enterprise & Society*, **4**, 2003, pp. 442-470.
[11] French and Phillips, 2000, p. 53.
[12] Michael French and Jim Phillips, 'Food Safety Regimes in Scotland, 1899-1914', *Scottish Economic and Social History*, **22**, 2002, pp.134-157.

The concerns about aspects of the sample collection process highlighted by French and Phillips as well as Peter Atkins have not been addressed by other historians. In the few studies that deal with the adulteration issue, and in other broad dietary histories, the 1875 Sale of Food and Drugs Act has been seen as an effective measure that, by the end of the nineteenth century, brought about a reduction in adulteration. In general, these optimistic assessments have been viewed from a central perspective taking as their guide the official statistics on adulteration published annually by the LGB.[13] These figures were compiled from the quarterly returns of public analysts submitted by them to their respective employing authorities. These returns were then sent to the LGB where they were collated and the results published in the Board's Annual Reports. The public analyst based his returns on the analysis of samples which had been collected and submitted to him by inspectors designated under the 1875 Act to perform this task. There has been little research into how these figures were compiled, or questions raised as to their accuracy. It is this very local aspect of implementation that will be examined and assessed in this thesis.

The lack of published scholarly research on the adulteration issue, especially on local implementation of the 1875 Sale of Food and Drugs Act, reinforces the views of historians such as Anthony Wohl who consider that in general many local aspects of sanitary reform have been neglected.[14] This view has been echoed by Christopher Hamlin who notes that, while a great deal of attention has

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[13] E.J.T. Collins observes that the decline in food adulteration can be 'gauged' from these returns. Collins, 1993, p.103. Ingeborg Paulus uses the LGB figures to measure the efficacy of legislation although she does stress that these statistics 'indicate *trends* only'. Paulus 1974, p.104.

[14] Anthony S. Wohl, *Endangered Lives*, 1984.

been paid to 'infrastructure development' in the nineteenth century, we have far less information about the 'day-to-day policing of the environment'.[15] This is especially true when it comes to the role of inspectors designated to collect samples under the 1875 Act. While there has been considerable research into the activities of central government inspectors, especially the Factory Inspectorate, there has been little research into the daily operation of locally administered inspectorates. As this thesis will demonstrate, constraints identified by Peter Bartrip and Paul Fenn as affecting the work of central government inspectors — such as opposition to the law, anomalies in the law and limited manpower — also operated in relation to the work of inspectors administered at local level, and had a very considerable impact on how the law was implemented.[16]

The adulteration issue and the process of legislative reform had implications in many other areas and therefore have to be seen in a variety of historiographical contexts which provide the essential background to understanding the implementation of the 1875 Act. Adulteration is perhaps most closely tied to business history and nineteenth-century developments in that area. Changes in

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[15] In this case Hamlin's 'policemen' were inspectors of nuisances, one of a number of officials permitted to collect samples under the 1875 Act. Christopher Hamlin, 'Sanitary Policing and the Local State, 1873-1874: A Statistical Study of English and Welsh Towns', *Social History of Medicine*, **18**, (1), April 2005, pp. 39-61, p. 39. Christopher Hamlin, 'Muddling in Bumbledom: On The Enormity of Large Sanitary Improvements In Four British Towns, 1855-1885', *Victorian Studies* **32**, 1988, pp. 55-83.

[16] The most authoritative studies in this area have been undertaken by Peter Bartrip and Paul Fenn. P.W.J Bartrip and P.T. Fenn 'The Administration of Safety: The Enforcement Policy of the Early Factory Inspectorate, 1844-1864', *Public Administration*, **58**, 1980, pp. 87-102. P.W.J. Bartrip, 'British Government Inspection, 1832-1875: Some Observations', *The Historical Journal*, **25**, (3), 1982, pp. 605-626. P.W.J. Bartrip and P.T. Fenn, 'The Evolution of Regulatory Style in the Nineteenth Century British Factory Inspectorate', *Journal of Law and Society*, **10**, 1983, pp. 201-222.

patterns of retailing, the great expansion in the number of shopkeepers together with increasing competition, were particularly important aspects of that history and had a direct influence on the adulteration issue.[17] Adulteration also has to be seen within the context of the great sanitary reforms taking place during the nineteenth century. The introduction of the 1875 Sale of Food and Drugs Act came at a time when the State was increasingly taking responsibility for public health with new administrative structures introduced to implement sanitary improvement. A new interest in preventive medicine — witnessed by the involvement of medical men in highlighting the adulteration issue — together with the increasing involvement of health professionals at both central and local government level were to have important influences on the food reform movement.[18] Other important factors were the professionalisation of medicine, changes in the organisation of medical practice and the emergence of the general practitioner. Developments in science also had important implications for the adulteration issue. Increasingly, scientific knowledge came to be used as a basis for claiming authority while advances in analytical chemistry assisted the public analyst in the detection of adulterations. At the same time the growth of professional associations to represent groups, such as public analysts, was an important feature in their professionalisation, while these organisations were themselves important pressure groups who agitated for food reform.[19]

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[17] David Alexander, *Retailing in England during the Industrial Revolution,* 1970. Roy Church (ed), *The Dynamics of Victorian Business*, 1980. Michael J. Winstanley, *The Shopkeeper's World 1830-1914,* 1983.

[18] Jeanne Brand, *Doctors and the State,* 1965. Dorothy Porter and Roy Porter (eds) *Doctors, Politics and Society: Historical Essays,* 1993. Dorothy Porter, *Health, Civilization and the State,* 1999.

[19] Robert Bud and Gerrylynn K. Roberts, *Science versus practice. Chemistry in Victorian Britain,* 1984.

While this thesis will examine the implementation of the 1875 Act at local level, it is important to place the main issues in a historical context that will provide a better understanding of topics raised later in the thesis. The first chapter will therefore discuss key areas in the history of adulteration up to the late 1850s. At this time investigations by medical reformers provided a more informed view of the adulteration issue than previously. In the following two decades the first legislative controls would be implemented. Chapter two will look at difficulties with these early legislative measures and discuss the provisions of the 1875 Sale of Food and Drugs Act which were meant to solve them. Chapters three, four and five form the core of the thesis. Chapter three will examine the administrative structure of the 1875 Act and the role of each organisation and official involved. The chapter will also focus on the relationship between central government departments and local bodies concerned with the more practical implementation of the Act. Chapters four and five will discuss sample collection and analysis and illustrate the many difficulties faced by inspectors and public analysts when performing these tasks. The final chapter is an area study that examines how the 1875 Act was implemented within the county of Essex; a county specifically selected for this study as it is both urban and rural in character. As the purpose of this thesis is to re-evaluate the implementation of the Act at local level an area study will facilitate this. Focussing on a particular local context highlights and draws together many of the issues raised in previous chapters and shows how, together, they combined to make this legislation less effective. This local study will thus contribute to a reasoned assessment as to the general effectiveness of the 1875 Sale of Food and Drugs Act.

Chapter One

Adulteration before 1860

While the adulteration problem came to prominence during the nineteenth century, it had a long history before this period. Adulteration practices have been recorded since earliest times. However, it was not until the early-nineteenth century with the investigations of Fredrick Accum, published in 1820, that there was any systematic attempt to evaluate the adulteration problem.[1] Accum's investigations, and the publicity surrounding them, stimulated a great deal of interest in adulteration, but did little to bring about change. It was not until the 1840s that various interest groups increasingly agitated for reform and began an organised campaign to secure legislative controls.

The reformers' case was strengthened by *The Lancet* investigations into adulteration which took place in the early 1850s. These not only confirmed that adulteration was practised on an extensive scale affecting almost every food item, but also revealed that many of the adulterants used contained poisonous substances considered to be a danger to health. Publicity given to these findings increased agitation for reform and in 1855 a Select Committee to investigate the problem was formed. While this committee confirmed that adulteration was a very real problem, it also emphasised the great diversity of views on the adulteration issue. The existence of many disparate groups, all anxious to

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[1] Fredrick Accum, *A Treatise on Adulterations of Food and Culinary Poisons*, 1820.

protect their own interests in the face of impending legislation, indicated that there would be many serious difficulties in obtaining a solution acceptable to all parties. This was confirmed by the compromise nature of the legislation eventually introduced in 1860 which would consequently prove totally ineffectual in controlling adulteration.[2]

To understand the failure of this legislation and therefore the issues underlying subsequent legislation, including the 1875 Act, it is important to understand the history of adulteration prior to 1860. It is equally important to appreciate the concerns of some of the various interest groups in the context of the great changes taking place within society during the nineteenth century. Addressing these issues in this chapter will allow for a better understanding of the complex and diverse nature of the task facing reformers. It will also provide a framework for understanding the questions of control discussed later in the thesis.

Adulteration before the Nineteenth Century

It is clear from much of the early literature on adulteration, as well as both eighteenth-century and nineteenth-century literature, that the term had a variety of meanings; what one person understood by it was not necessarily what was understood by another. The meaning of the term also changed over time. An eighteenth-century dictionary defines 'adulteration' as 'the act of adulterating or corrupting by foreign mixture; contamination', while a modern dictionary

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[2] Paulus, pp. 22-30.

describes it as 'to debase by adding other or inferior material'.[3] Adulteration might simply mean the addition of relatively innocuous materials to add weight or bulk. It might also involve the removal of one substance and replacement by another, or the addition of poisonous materials in order to mimic the look of a particular article. As this study will show, providing an acceptable definition of adulteration became an important issue during the nineteenth century. All the early adulteration acts failed to do this and, without such a legally comprehensive definition, prosecuting those who might be guilty of adulteration clearly became more difficult. In 1875, *The Encyclopaedia Britannica* defined adulteration as, 'the act of debasing a pure or genuine commodity for pecuniary profit, by adding to it an inferior or spurious article, or by taking from it one or more of its constituents'.[4] As this definition appeared in the same year as the 1875 Sale of Food and Drugs Act, it would seem most appropriate to this thesis.

As communities developed and individuals increasingly relied on others to supply their food, so the opportunities for exploitation and fraud increased. While there are some colourful examples of adulteration practices in medieval times, many of which are contained in nineteenth-century translations from thirteenth, fourteenth and fifteenth-century Latin sources, it would seem that in these earlier societies adulteration was only practised on a small scale, was relatively unsophisticated and was easily controlled.[5] There is little factual evidence to indicate the problem

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[3] Samuel Johnson, *A Dictionary of the English Language*, fifth edition, 1784. *The Oxford English Reference Dictionary*, 1995.
[4] Dr Henry Letheby, 'Adulteration', *The Encyclopaedia Britannica*, (ninth edition) **1,** 1875, pp.167-177.
[5] Henry Thomas Riley, *Liber Albus* (The White Book of the City of London, compiled 1419), translated from the Latin by Henry Riley, *Memorials of London and London Life in the 13th, 14th*

was widespread. As John Burnett points out, in a largely agricultural society such as England before the eighteenth century, producer and consumer lived in close contact and there was little opportunity or need for adulteration. With industrialisation, escalating population growth and rapid urbanisation, this situation changed. Producer and consumer became distanced, middlemen such as wholesalers emerged, and combined with other factors, the opportunities for adulteration increased.[6]

In the eighteenth century, a growing amount of literature on adulteration, reflected the many changes occurring in society. As Andrew Wear has noted, the age of Enlightenment was a time of great change, especially in medical thinking which was no longer based on the 'four humours of the Greeks but on chemistry and mechanics'. As part of this process there was also an increasing emphasis on the view that much illness could be avoided if improvements were made in life style and personal hygiene.[7] As Dorothy Porter notes, this 'medical environmentalism' also 'encouraged the quantitative analysis of disease' supporting at the same time 'a new interest in preventive medicine'.[8] It is therefore not surprising that a greater interest in diet and the quality of food should also be apparent at this time.

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and 15th century, translated by Henry Riley, 1868. Luke Owen Pike, *A History of Crime in England,* 1873. A very comprehensive history of early food frauds was provided by the chemist Frederick A. Filby in *A History of Food Adulteration and Analysis,*1934. Many of Filby's sources on early food frauds come from City Letter Books, guilds such as the Bakers' Company and early manuscripts some of which can be seen at the British Library and the Guildhall Library. John Postgate, 1990, pp. 31-33. Professor Postgate has a personal interest in the subject of adulteration being the great grandson of Dr John Postgate the medical reformer who was very influential in the anti-adulteration campaign of the 1850s.

[6] John Burnett, 1989, pp. 86 - 95.

[7] Andrew Wear (ed), *Medicine in Society,* 1992, p. 5.

[8] Dorothy Porter, 1999, p. 56.

Bread adulteration in particular attracted attention and by mid-century a large amount of literature on this subject was being published.[9] Often these accounts concentrated on the more sensational aspects of the practice and, while they provide an interesting commentary on the issue they contain little in the way of reliable data to support many of the assertions made, so little credibility can be given to them as indicators of the extent of adulteration during the eighteenth century. However, the fact that so many articles on bread adulteration appeared during this period is an interesting aspect of adulteration history. In part it may be explained by the importance of bread as a staple food. Until the twentieth century, bread 'was the single most important element...in the diet of the majority of the population of Britain'.[10] Because of this, all aspects of the bread-manufacturing process, as well as characteristics of consumption, would always have important social and economic implications.[11] Bread also has important symbolic meanings; 'many customs and superstitions' have become associated with it.[12]

Articles on bread adulteration were often published in the form of pamphlets, a common form of publication at this time, in which ideas, sometimes controversial, could be put forward relatively cheaply to a wide audience.[13] These articles often discussed the type of adulterants that might be added to bread as well as the

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[9] Some often cited examples are: Peter Markham, *Syhoroc: or Considerations on the Ten Ingredients used in the Adulteration of Bread-flour, and Bread*, 1758, BL 1651/424. 8275. c. 57. James Manning, *The Nature of Bread Honestly and Dishonestly Made*, 1758, BL 1608/2296. Peter Markham, *A Final Warning to the Public to Avoid the Detected Poisons*, 1758, BL 1651/521. Henry Jackson, *An Essay on Bread*, 1758, BL T. 1144 (14).

[10] James P. Johnston, *A Hundred Years Eating*,1977, p. 20.

[11] Christian Petersen, *Bread and the British Economy,* 1995. As Petersen observes, 'bread was the fuel that powered the muscle and sinew of labour in the "workshop of the world" '. p.1.

[12] Allan G. Cameron, *Food – Facts and Fallacies*, 1971, p. 69.

[13] Reginald Reynolds, (ed) *British Pamphleteers*, vol. 2, 1951.

adverse effects they could have on the health of the population. One of the most persistent allegations was that millers and bakers were using undesirable substances such as alum, chalk and even ground human bones to whiten flour. While never proved conclusively, the idea that human bones were used as 'whiteners' in the bread-making process was disturbing. It was an image that would become fixed in the popular psyche and would be difficult to dispel.[14]

The practice of whitening flour came about as the result of growing demand during the eighteenth century, for a white loaf. There was an erroneous assumption on the part of the public that a loaf made with whiter flour was more digestible and superior in quality to the coarser brown loaf.[15] Faced with a growing demand by consumers for the white loaf, millers and bakers increasingly used adulterants such as alum and chalk to produce the desired effect.[16] This was an early example of how consumer demand could influence the way a product might look or taste. By the nineteenth century, such preferences would become even more influential. Anxious to supply such demands, some manufacturers would use potentially harmful ingredients to achieve the desired

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[14] One of the earliest claims that bones were commonly added to whiten bread appears in, *Poison Detected: or Frightful Truths; and Alarming to the British Metropolis,* 'By my friend a physician', 1757, BL 104. m. 40. Although the author was not positively identified, the source was thought to be Peter Markham a physician and writer on adulteration. Markham's claim would be reiterated by many other writers on the subject of bread adulteration.

[15] Barbara Griggs, *The Food Factor,* 1986, p. 89. By the mid-eighteenth century Hogarth observed that Londoners demanded bread as 'white as any curd'. Quoted in Petersen, 1995, p.19. As James Johnston notes, the colour of bread had been 'a contentious subject for many centuries'. Debates about the various qualities of either the white or brown loaf, would continue well into the twentieth century. Johnston, 1977, pp. 25 - 31.

[16] Johnston, 1977, p. 25. E.J.T. Collins notes that by 1900 the white wheaten loaf comprised over 95 per cent of bread consumption by weight, E.J.T. Collins 'The "Consumer Revolution" and the Growth of Factory Foods: Changing Patterns of Bread and Cereal-Eating in Britain in the Twentieth Century', in Derek J. Oddy and Derek S. Miller (eds), *The Making of the Modern British Diet,* 1976. p. 28.

result. Such practices only exacerbated the adulteration problem and are an important aspect of the adulteration issue.

An examination of eighteenth-century literature on bread adulteration shows that some writers vied with each other to produce the most sensational claim or counter-claim, while others appeared to copy directly from one another.[17] Many eighteenth-century writers on bread adulteration directed their complaints towards undesirable practices by millers and bakers, while others came to the defence of this group. In some cases, the bakers themselves wrote articles disputing the exaggerated claims made against them. The chemist Henry Jackson, writing in 1758, acknowledged that some bakers added alum to bread, but dismissed many of the more lurid claims. He felt that the cost of procuring and grinding adulterants, such as bones and lime, would in fact be greater than purchasing and using flour.[18] In his early twentieth-century history of adulteration, the chemist Frederick Filby also defended the integrity of the bakers. He felt that had many of the alleged adulterants actually been added to bread, the resulting product would have looked and tasted very unpleasant and been virtually inedible.[19] Other writers suggested that authors of the more sensational works on

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[17] M****** Dr., of Bath, *Public Villainy Exposed; or a Discovery of the Different Adulterations and Poison in Bread,* 1800, BL T. 298. (1). On the back of this manuscript is a handwritten annotation that illustrates this point. Signing himself simply 'A.W'., this person says he bought the tract in Bristol in 1800, at a time when there was a great deal of hostility between bakers and the public over the quality of bread. Some time later he came across Henry Jackson's *Essay on Bread* 1758 and noticed a great similarity between that publication and *Public Villainy Exposed*, in fact several lines were 'word for word' the same as Jackson's. 'A.W' supposes that at the time of the hostility between bakers and the public in 1800, M****** Dr., of Bath had seen the opportunity to present a 'piping hot new detection', when in fact much of it was copied directly from Jackson's earlier document.

[18] Jackson, 1758.

[19] To prove this point Filby, with the help of a master baker, made several loaves containing adulterants alleged to have been included in bread in the eighteenth century. The resulting loaves smelt 'horrible' with a 'shell of hard cement' and an interior of 'dark yellow paste'. Filby

bread adulteration simply wanted to exploit public fears and make money from their writings.[20]

It is noticeable that many authors writing on bread adulteration at this time were physicians, reflecting a growing concern on the part of Enlightenment doctors for the general health of the people — what Christopher Hamlin calls 'a public health movement of sorts'.[21] As he notes, the second half of the eighteenth century saw an increasing awareness that unfavourable social and environmental circumstances such as poor diet, inadequate shelter and poor working conditions, had an adverse effect on health. To raise awareness of this, and emphasise the needs of the poor, an increasing number of medical men put forward their views in books and pamphlets.[22] It was medical men who did much to publicise the adverse effects of adulteration. They would be the driving force behind the reform movement of the nineteenth century and *The Lancet* investigations into adulteration that would take place during the 1850s.

The large amount of literature on adulteration at this time might suggest that the food trades were completely unregulated. However, some controls over the quality of foodstuffs had existed since the thirteenth century. Trade Guilds and the Assize system provided some controls on both food and drink. The Assize of

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also discusses how, in his opinion, allegations of bone-ash in bread came about. He says that bone-ash had been used, not in flour, but as a way of stopping up holes and cracks in millstones. Filby, 1934, pp. 99,101.

[20] Sampson Syllogism a Baker, *A Modest Apology in Defence of the Bakers*, 1757, BL 104.1. 20. (attributed to Emmanuel Collins) *Lying Detected; or, some of the Most Frightful Untruths that Ever Alarmed the British Metropolis Fairly Exposed. Plainly Showing the Absurdity as well as Villainy of the False Charges Made on the Bakers of London.* 1758, BL 1414. d. 83. (6).

[21] Christopher Hamlin, 'State Medicine in Great Britain', in Dorothy Porter (ed) *The History of Public Health and the Modern State,* 1994, p.134.

[22] Hamlin, in D. Porter, 1994, pp.134-135.

Bread, in existence from the thirteenth century until 1836, provided a countrywide regulation of bread prices based on the price of wheat. It also determined the exact size and weight of loaf that was to be made. Local officials checked that the Assize was being adhered to and, if not, ensured that all offenders were punished.[23] Restrictions on the size and weight of loaf that could be produced were not popular with bakers as many found that, in order to comply with the regulations, they were working for a loss. As a result many were forced to resort to adulteration practices. Writing in 1882 the public analyst, Alexander Wynter Blyth, considered that the effect of the Assize had probably been the exact reverse of what was intended. Because of the restrictions it imposed on trade, many bakers suffered unjustly and as a result 'had a direct inducement to recover their losses by nefarious practices'.[24]

One little-known scheme, which began in the eighteenth century and had as one of its aims the control of adulteration, was the formation of flour and bread societies. Between 1759 and 1820, at least forty-six of these societies were established in England and Scotland. Owned by consumers, or indirectly through a friendly society, they came about as a direct consumer response to high bread prices, poor organisation in distribution and the adulteration of flour.[25] The Hereford Subscription Flour Company, established in 1801, was typical; the company had been set up, 'for the Purpose of Reducing the Unexampled Prices

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[23] Alan S.C. Ross, 'The Assize of Bread', *Economic History Review*, (second series), **9**, 1956-7, pp. 332-342.
[24] Alexander Wynter Blyth, *Foods: Their Composition and Analysis: A Manual for the use of Analytical Chemists and Others*. 1882, p. 5.
[25] Joshua Bamfield, 'Consumer-Owned Community Flour and Bread Societies in the Eighteenth and Early Nineteenth Century', *Business History*, **40:4**.1998. pp.16 - 36.

of Bread and Flour, and to Prevent the Adulteration of these Articles with Materials of Inferior and Pernicious Qualities'.[26] Being consumer-owned businesses, the integrity of their agents was paramount. Article 16 of the Hull Subscription Mill clearly stated that 'any flour seller detected adulterating' or committing other offences such as giving 'short weights' or 'altering scales, beams or weights so as to defraud the members of the society shall be discharged'.[27] As Joshua Bamfield points out, 'the combination of community business practice with high ideals makes them an early form of co-operative endeavour'. However, it would be 'an oversimplification to call these mixed and diverse organisations "co-operatives" '.[28]

The sensationalist nature of much eighteenth-century literature on adulteration, makes it difficult to form an assessment of the real scale of the problem at this time. Little credibility can be given to many of the more exaggerated claims which appeared to succeed only in causing alarm among the public. From a modern perspective it would seem that a more reliable assessment of the problem was needed, and this would be provided in the early-nineteenth century by Fredrick Accum.

Fredrick Accum and his *Treatise* of 1820

Born in Germany in 1769, Accum studied pharmacy and became associated with the Brande family who operated drug and chemical firms in London and

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[26] *Articles of the Hereford Subscription Flour Company*, 1801, Quoted in Bamfield p.16.
[27] Bamfield, pp.17, 26.
[28] Bamfield, p.17.

Hanover. Owing to this connection, Accum transferred to the Brande Pharmacy in London in 1793, where he worked as a chemical assistant before opening his own premises in Soho.[29] Here he delivered lectures on chemistry and mineralogy and gave demonstrations which proved very popular.[30] This approach was very much in the Enlightenment tradition of popularising science which was increasingly seen as an extremely useful tool that could benefit society in many everyday contexts.[31] In 1801, Accum was appointed Chemical Operator at the recently established Royal Institution in London, where he worked with Humphry Davy, and in 1809 he was appointed Professor of Chemistry at the Surrey Institution.[32] Both these institutions were dedicated to disseminating scientific and technical knowledge through lectures to a wide audience; knowledge that could be used for practical improvements in areas such as manufacturing industry and agriculture.[33]

Accum was a pioneer in the commercial production of coal-gas as well as a prolific author on topics in applied science, writing books on wine, brewing, culinary chemistry, gas lighting and bread.[34] Such a diverse range of activities

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[29] Ernst W. Stieb, *Drug Adulteration. Detection and Control in Nineteenth-Century Britain*, 1966, p.161.
[30] Charles Albert Browne, 'The Life and Chemical Services of Fredrick Accum', *Journal of Chemical Education*, **2**, (10), 1925, pp. 829-1149, p. 836.
[31] Frederick Kurzer, 'Chemistry and Chemists at the London Institution 1807-1912', *Annals of Science*, **58**, 2001, pp.163-201. Jan Golinski, *Science as Public Culture: Chemistry and Enlightenment in Britain, 1760-1820,* 1999, p. 247.
[32] Browne, p. 836.
[33] Frederick Kurzer, 'A History of the Surrey Institution', *Annals of Science*, **57**, (2), 2000, pp.109-141. As Kurzer notes, the course on chemistry at the Surrey Institution was the 'most systematic course on offer' and for 'seven seasons' was delivered by Accum. Kurzer, 2000, p.124.
[34] Fredrick Accum, *Practical Treatise on Gas Light*, 1815, *Chemical Amusement...Experiments in Chemistry*, 1817, *Treatise on Wine Making*, 1820, *Culinary Chemistry*, 1821, *Treatise on Bread Making*, 1821, *Treatise on the Art of Brewing*, 1821.

was typical for consulting chemists like Accum at this time.[35] In 1820, his work on adulteration, *A Treatise on Adulterations of Food and Culinary Poisons* was published.[36] According to Accum, the aim of this work was to emphasise the extensive nature of adulteration, to inform the public on ways of detecting adulteration and to 'put the unwary on their guard'.[37] It seems that Accum succeeded in his aim of bringing the topic to public attention. Within a year, over 4,000 copies of the *Treatise* had been sold and, by 1822, the work reached a fourth edition. Accum's well-established professional reputation might account for some of this publishing success, but some part must also be attributed to the dramatic and arresting cover of the book which depicted a skull surmounting a pot, on which was the biblical quotation, 'There is Death in the Pot'. (II Kings, 4, 40).[38] In some editions this illustration was also printed on the title page. Whether Accum was being entirely original in this choice of quotation is questionable. In 1781, the Rev. Joseph Robertson had published a tract entitled *An Essay on Culinary Poisons*, in which he discussed the indiscreet use of 'vegetable and mineral poisons' in the preparation of food which were said to produce 'troublesome and sometimes fatal disorders'. Such was the extensive nature of this problem that Robertson noted, '...we may exclaim with the sons of the prophet, 'There is Death in the Pot', the exact biblical quotation Accum would use in his book forty years later.[39]

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[35] Bud and Roberts, 1984, p. 27.
[36] Accum, *A Treatise on Adulterations*, 1820.
[37] Accum, *A Treatise on Adulterations*, 1820, p. iii.
[38] Accum, *A Treatise on Adulterations*, 1820.
[39] Rev. Joseph Robertson, *An Essay on Culinary Poisons*, 1781.

A TREATISE

ON

ADULTERATIONS OF FOOD,

AND

Culinary Poisons,

EXHIBITING

THE FRAUDULENT SOPHISTICATIONS

OF

BREAD, BEER, WINE, SPIRITUOUS LIQUORS, TEA, COFFEE,

Cream, Confectionery, Vinegar, Mustard, Pepper, Cheese, Olive Oil, Pickles,

AND OTHER ARTICLES EMPLOYED IN DOMESTIC ECONOMY.

AND

Methods of detecting them.

THE SECOND EDITION.

BY FREDRICK ACCUM,

Operative Chemist, Lecturer on Practical Chemistry, Mineralogy, and on Chemistry applied to the Arts and Manufactures; Member of the Royal Irish Academy Fellow of the Linnæan Society; Member of the Royal Academy of Sciences, and of the Royal Society of Arts of Berlin, &c. &c.

London:

SOLD BY LONGMAN, HURST, REES, ORME, AND BROWN,

PATERNOSTER ROW.

1820.

Title page from Fredrick Accum's *A Treatise on Adulterations of Food and Culinary Poisons*, second edition, 1820.

While Accum's work does not give details as to how samples were obtained, or how many samples of each item were actually analysed, his work does provide a comprehensive examination of almost every item of food and drink available in the early-nineteenth century. Following some preliminary observations on adulteration, subsequent chapters of the *Treatise* deal with most everyday items such as bread, beer, tea and pickles. Methods of adulteration are discussed and, in many cases, Accum gives detailed instructions as to how these adulterants could be detected and how the public could perform such tests at home. This systematic approach, relying as it did on observation and scientific experiment, was in complete contrast to earlier, more impressionistic accounts of adulteration. From his investigations, Accum was in no doubt that adulteration was practised on an extensive scale. He found that pickles were coloured with copper, cheese with red lead, coffee adulterated with 'pease and beans', while tea was often largely made up of 'thorn leaves'.[40] In the *Treatise*, Accum also included details of court cases where grocers and others had been prosecuted and convicted for adulteration offences. Some of this information suggests that considerable quantities of adulterated goods were being produced at this time; particularly counterfeit tea and coffee. The sheer quantity of adulterated articles mentioned, also indicates that a great number of people were involved in these frauds.[41]

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[40] Accum, *A Treatise on Adulterations*, 1820, pp. 306, 290, 230.
[41] This point is illustrated by two examples from the *Treatise*. In 1818, Edmund Rhodes was charged with fabricating one hundredweight each of sloe leaves, ash leaves, elder leaves and the leaves of 'a certain other tree in imitation of tea...'. In another case heard in 1818, the Excise Officer had seized 1,567 pounds of adulterated coffee from a dealer. Accum, *A Treatise on Adulterations*, 1820, pp. 224 - 225, 248.

In the *Treatise*, Accum highlighted many issues that would remain problematic throughout the nineteenth century. In particular, he observed that in order to avoid detection, many adulteration processes 'are very ingeniously divided and subdivided among individual operators, and the manufacture is purposely carried on in separate establishments'.[42] This aspect of adulteration would pose many problems for those attempting to implement legislative controls. Establishing exactly when and where the adulteration had taken place and who might be responsible would often prove extremely difficult, if not impossible. As a result, many of those suspected of adulteration were able to avoid punishment. Accum also noted that two varieties of the same item might be kept by the shopkeeper; one genuine and the other adulterated. The idea was to sell the inferior article to less worthy customers such as bad debtors.[43] As later investigations would reveal, such practices were commonplace. In many shops the quality of food and drink was 'graded' according to the perceived worthiness of the customer. Later in the century, these practices would make the job of inspectors collecting food samples even more difficult, especially when an inspector was known to the shopkeeper who would then make a point of giving him the genuine article. During the nineteenth century, food reformers would make frequent proposals that the practice of 'naming and shaming' offenders might lead to a decline in adulteration. It was a move always strongly resisted by the business community because of overriding fears that innocent traders might be wrongly accused.[44]

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[42] Accum, *A Treatise on Adulterations*, 1820, p. 5.
[43] Accum, *A Treatise on Adulterations*, 1820, p. 331.
[44] *Report from the Select Committee on Food Products Adulteration* 1896, (288) IX, Q. 2196. This Committee convened in 1894 and which extended over a three year period, is a key source as it provides a comprehensive review of the adulteration issue and the effectiveness, or

Following publication, Accum's work on adulteration received so many reviews, that his biographer, Charles Browne writing in 1925, considered the work to be probably 'the most extensively reviewed book upon chemistry ever written' up to that time.[45] It certainly attracted the attention of the most respected quarterly journals across the political spectrum, including the *Quarterly Review,* the *Edinburgh Review* and *Blackwood's Magazine.* On the whole, critics were favourable. Most acknowledged that Accum had done the public a great service by exposing the extensive nature of adulteration.[46] That the *Treatise* was received so positively had much to do with the fact that Accum was already a well-respected chemist. As a result, and in contrast to earlier literature on adulteration, his work appeared to have a more authoritative base. However, there were some who felt Accum had exaggerated the extent of adulteration and accused him of causing needless alarm and panic.[47] Despite such criticisms, his work was the first attempt to provide an assessment of adulteration based on scientific experiment; as such it marks an important milestone in the way the problem was perceived in the early-nineteenth century.

However, despite the greater credence given to Accum's work, the *Treatise* stimulated no immediate action to improve the quality of food. This failure is often attributed in large part to the prevailing economic policy of *laissez faire;* a policy

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otherwise, of adulteration legislation implemented during the nineteenth century. It is discussed more fully in chapter three.

[45] Browne, p. 1028.

[46] A positive review of Accum's work was provided by one of the most influential magazines of the day, the Whig supporting *Edinburgh Review*, **33**, 1820, pp.131-144.

[47] *Blackwood's Edinburgh Magazine* 1820 criticised the alarmist nature of Accum's work but did admit that 'Mr Accum has been tolerably successful in communicating his own terror to his readers', **6**, 1820, pp. 542-554, p. 544. The *Quarterly Review*, Tory rival to the *Edinburgh Review,* also felt that Accum's work was likely to create unnecessary alarm and was overly dramatic. **24**, 1820, pp. 341-352, p. 342.

that would hinder effective food reform for most of the nineteenth century.[48] A secondary factor was that Accum became involved in a scandal that brought his own integrity into question and, by implication, his competence as a scientist. Just less than a year after publication of the *Treatise,* he was accused by the Royal Institution of removing pages from books in their library.[49] Accum failed to attend for the subsequent court hearing and within a few months returned to Germany, where he remained until his death in 1838.[50]

Literature on Adulteration 1820-1855

Accum's *Treatise* did, however, stimulate a great deal of interest in the adulteration issue. Between the 1820s and 1840s many works were published on adulteration and ways it might be detected. Such was the volume of this literature that one writer later noted that the press at this time 'literally groaned with the efforts of sensational writers on the subject'.[51] Many writers drew attention to the more dramatic aspects of adulteration, others repeated much of what Accum had said earlier or even copied directly from his work.[52]

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[48] Steib, p.107.

[49] Records of the Royal Institution show that they went to some trouble to establish that Accum was indeed the culprit by boring peep holes in a cupboard of the Reading Room so staff could have a better view. Their suspicions were confirmed and Accum was seen tearing leaves out of a journal. Following a search of his house a further thirty leaves from books belonging to the Royal Institution were found. Royal Institution of Great Britain, Managers Meetings, 23 December 1820. Manuscript vi, 303, 16 April 1821, Manuscript vi, 320.

[50] 'Westminster Sessions. Mr Accum's Case', *The Times*, 6 April 1821, p. 3, col. e.

[51] Henry Letheby 'On Food', four Cantor lectures delivered to the Society for the Encouragement of Arts, Manufactures and Commerce. January and February 1868, p. 264.

[52] For example, 'By an Enemy of Fraud and Villainy', *Deadly Adulterations and Slow Poisoning. or Disease and Death in the Pot and Bottle,*1830. Not only did this anonymous work have a similar title to Accum's *Treatise* but the author repeated many of Accum's phrases. See also, 'A Chemist', *The Domestic Chemist Comprising Instructions for the Detection of Adulteration.* 1831. Andrew Ure, *Supplement to Dr. Ure's Dictionary of Arts, Manufactures and Mines.* 1844.

Writing in 1848, the analytical chemist John Mitchell, argued that adulteration had become steadily worse over the twenty-eight years since Accum's time. In large part, he attributed this to advances in chemistry which afforded '... on the one hand more demanding and unequivocal tests for the adulterations, at the same time gave a larger scope for the adulterations...'. According to Mitchell this meant that articles could be adulterated in a way that was '...almost imperceptible to most of the usual chemical tests'.[53] In 1934, Frederick Filby, who was a practising analytical chemist in Birmingham, supported this view. He considered that while chemical advances during the nineteenth century had improved the detection of adulteration, these same scientific advances also aided the dishonest manufacturer or trader who wished to adulterate their goods. The great increase in literature on the subject of adulteration also meant that far more people had enough information to undertake fraudulent practices. According to Filby, 'the detection and the crime grew nearly side by side...then there arose that great enemy of adulteration, analytical chemistry':

> At first the illegal practices had the upper hand. Gradually the science caught up and finally outstripped the crime. All the way through, analytical chemistry was hindering what would, I believe, have otherwise been a far greater increase in adulteration...[54]

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[53] John Mitchell, *Treatise on the Falsifications of Food and the Chemical Means Employed to Detect Them*, 1848.
[54] Filby, p.18.

Changes in Retailing Patterns

The apparent increase in adulteration at this time has to be seen within the context of the many changes taking place in society. Escalating population growth and the movement into towns changed the very structure of society. As of 1801, 30 per cent of the English population lived in towns, but by 1851 the census would show that, for the first time, over half the population were now urban residents.[55] These demographic changes were to have profound effects on every aspect of life, not least on patterns of retailing. In cities, families no longer provided for themselves or had food supplied by local and known suppliers, but depended on the expanding network of shopkeepers and other sellers. Old systems of supply became ineffective and as the producer lost direct contact with his consumer, a middleman or wholesaler was needed to bridge the gap. As the distance between producer and consumer increased, so too did opportunities for adulteration.[56] The ever expanding railway system was another important factor. The growth of railways and the decline of town dairies meant that items such as milk were brought in from ever-greater distances and this increased the possibilities for adulteration. It became almost impossible to say where a product had been adulterated when it might have passed through a number of different supply centres, or in the case of milk, might have been put on the railway network many miles from its final destination.[57]

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[55] Robert Woods, *The population history of Britain in the nineteenth century,* 1995, p. 23.
[56] Burnett, 1989, pp. 93-95.
[57] P.J. Atkins, 1978, 1991.

In any discussion on factors that may have contributed to an increase in adulteration, it is particularly important to examine changes in the role and position of the shopkeeper in the nineteenth century. Traditionally the shopkeeper was solely responsible for the quality of goods he sold. With increasing urbanisation this situation changed and the wholesaler gained in importance. As this happened, shopkeepers had far less control over the quality of goods they sold. This change would be important later in the century when the shopkeeper would be the first point of contact for food inspectors obtaining samples of food and drink.

As urban population increased so too did the number of shopkeepers. According to Michael Winstanley, trade directories indicate that the expansion of general 'shopkeepers' and 'dealers in groceries and sundries' from the 1820s was so great that in most towns this category easily formed the largest group of traders.[58] While it is clear that the overall number of shopkeepers increased, detailed information about the type of small shopkeeper at this time is less clear, in many cases there 'was no clear demarcation between the terms general shopkeeper, provision dealer and grocer'.[59]

Prior to the seventeenth century the most common way for goods to be sold was not from shops, but at fairs and markets, and by itinerant salesmen such as peddlers. Markets usually sold locally-produced, perishable items such as food. Even with the rise of fixed-place retailing in the early-nineteenth century, markets

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[58] Winstanley, 1983, p.12.
[59] Z. Lawson, 'Shops, Shopkeepers, and the Working-class Community: Preston, 1860-1890', *Transactions of the Historic Society of Lancashire and Cheshire*, **141**, 1991, pp. 309-328, p. 311.

continued to be popular. Fairs proved less adaptable to changing economic circumstances. Originally their function was the distribution of wholesale goods, but increasingly they lost this trade and, by the end of the eighteenth century, the fair had simply became a recreational outlet for the local population.[60] Despite the increase in fixed-place retailing, the popularity of the itinerant salesman continued well into the nineteenth century. Writing in 1861, Henry Mayhew estimated that the total number of street-traders in London was around 45,000, with 4,000 of these being engaged in the selling of 'eatables and drinkables'.[61] These numbers are important. As will be discussed later, the 1875 Sale of Food and Drugs Act did not make any provision for samples of food or drink to be taken from street sellers. It was not until 1879 that new legislation permitted this.[62]

For many in retail trades, competition with rival traders — what in present day society would be termed a 'price war' — resulted in small profit margins. Forced into making economies the shopkeeper could make his goods go further by giving short weight or by adding inferior ingredients.[63] Driven by economic necessity and a poor understanding of the dangers of adulteration, some shopkeepers saw this as a legitimate answer to competition. For many, adulteration soon became accepted as 'normal' trade practice. Writing in 1989, John Burnett considered that the 'excessive degree' of competition was the

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[60] Christina Fowler, 'Changes in Provincial Retail Practice During the Eighteenth Century, with Particular Reference to Central-Southern England', *Business History*, 40:4,1998, pp. 37-54.
[61] Henry Mayhew, *London Labour and the London Poor*, vol. 2, 1861-2, p.1.
[62] The Sale of Food and Drugs Act Amendment Act,1879, (42 & 43 Vict. c. 30), s. 5.
[63] Winstanley, 1983, p. 63.

'principal cause of adulteration', agreeing with the similar view that had been expressed by the 1855 Select Committee on Adulteration of Food.[64]

By demanding lower and lower priced articles, irrespective of quality, the public themselves, it was sometimes argued, were in some way responsible for increases in adulteration that occurred during the nineteenth century. As the number of shopkeepers increased, so did the pressure of competition, forcing traders to lower prices. The public became accustomed to the lower prices offered by some shopkeepers. Known at the time as the 'rage for cheapness', this demand actively encouraged some traders to adulterate their goods. An inevitable result was that even if traders wished to offer better quality goods at a higher price, they would often lose custom. The public, who were more interested in price than quality, would simply go to another shopkeeper where they could find the required article at a price they wanted to pay.[65] It was principally to counter the adverse effects of competition that the co-operative movement came into being in the 1840s. By acting as both buyer and seller, the Co-operative retail store would effectively remove competition and with it one of the major causes of adulteration.

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[64] Burnett, 1989, p. 95. As one witness to the 1855 Select Committee noted, 'At present competition, instead of being what competition ought to be, a competition of skill as to who shall produce the best article at the cheapest price, is now really a competition as to who shall adulterate with the greatest cleverness'. Evidence of Alphonse Normandy, *Select Committee on Adulteration of Food,* 1855 First Report, (432) VIII, Q. 786.

[65] Arthur Hill Hassall, *Adulterations Detected; or Plain Instructions for the Discovery of Frauds in Food and Medicine,* 1857.

The Co-operative Movement and Adulteration

The Co-operative movement was one of the earliest and most important voluntary reform groups to focus attention on the adulteration problem. It has been suggested that this movement, coming into being as it did before state legislation to protect the consumer, 'acted somewhat as a standard bearer in the struggle to counteract misrepresentation and adulteration'.[66]

Concerns about poor food quality, particularly for the working class, coupled with a desire to introduce reforms that would directly benefit this class, were the guiding principles behind the setting up of the Co-operative movement by the Rochdale pioneers in 1844. The inspiration for the movement came from George Jacob Holyoake, the Chartist, journalist and social reformer. It was Holyoake who noted how the worst food always came to the poor because poverty gave them no chance to buy better quality. As a result, '...their stomachs are the waste bins of the market. It is their lot to swallow all the adulterations of the State'. Holyoake along with others, such as Frederick Robinson (Viscount Goderich) who had been Chancellor of the Exchequer between 1823 and 1827 and President of the Board of Trade in 1841, blamed 'the great war of competition' for the increase in adulteration.[67] They also noted that the public

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[66] Lozah Kassim, 'The Co-operative Movement and Food Adulteration in the Nineteenth Century', *Manchester Region History Review*', **15**, 2001, pp. 9 - 18, p. 9.
[67] George Jacob Holyoake, *The History of Co-operation in England*, (second period 1845-1878), 1879, p. 24.

achieved no advantage by the reduction in prices, because cheaper food became 'less and less pure'.[68]

The principles of co-operation, as envisaged by Holyoake, were to improve trading morality and supply better quality food. As well as sharing profits among its members, one of the most important aspects of the new movement was the setting up of a wholesale buying society. Because the society employed its own buyers who were able to obtain the best quality goods at the best price, this effectively did away with the middle-man. For the first time, shops in poor districts had supplies of a quality equal to those on sale in better neighbourhoods. From its humble beginning, the new retailing 'revolution' spread quickly. In the first thirteen years, 200 stores opened in Lancashire and Yorkshire, and by 1887 there were 951 Co-operatives in England with a membership of 674,602.[69] In the campaign to reduce adulteration, the Co-operative movement was an important voluntary initiative that offered customers the opportunity to purchase better quality food. The guarantee that food items were not adulterated was a 'strong element in the Co-operative movement's promotion of fair trade' and this aspect undoubtedly assisted the movement's rapid growth.[70]

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[68] Frederick John Robinson, (Viscount Goderich) 'On the Adulteration of Food, and its remedies', *Meliore: or Better Times to Come,* 1852.
[69] George Jacob Holyoake, *The Growth of Co-operation in England*, 1887, pp. 9,14.
[70] By 1914 it was estimated that the movement had a membership of three million. French and Phillips, 2000, p. 20. French and Phillips are quoting Peter Gurney, *Co-operative Culture and the Politics of Consumption in England, 1870-1930,* 1996, pp. 205 - 6, 241 - 2.

The Consumer and Adulteration

While the aim of the Co-operative movement was to provide better quality food at affordable prices, consumer preference for adulterated goods often made it difficult to put such ideals into practice. The Co-operative Central Agency was founded in 1850 to supply local outlets with pure goods. The agency's manager, Joseph Woodin, a grocer and tea dealer, had supplied a number of Co-operative stores with tea that contained only a small amount of colouring. However, it was clear that the public were suspicious of this tea. Having been used to adulterated tea, which was a 'vivid green' colour, they particularly disliked the 'dingy colour' of the unadulterated product and wished to return to purchasing their usual tea. It says much for the persistence and ideals of the movement that Woodin, on behalf of the Central Agency, published a pamphlet on adulteration in 1852 in an effort to counter this prejudice. He also instructed speakers who went around the country informing the working classes about the problems of adulteration as well as showing them how the unadulterated product should look.[71]

While many consumers were suspicious of new products preferring instead to purchase familiar items, even if they might be adulterated, others had little choice in the products they bought. This was especially the case with the truck system, where payment of wages was made in kind rather than in cash. It usually took one of two forms. In one, the workman was 'paid' in the articles which he made; in the other he was 'paid' in goods from a store owned by the company. Such a

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[71] *Select Committee on Adulteration of Food*, 1856, (379) VIII, Qs. 2527 - 2528.

system encouraged the offloading of poor quality goods. While the Truck Act of 1831 made the system illegal, it was still prevalent later in the century.[72] Those working-class consumers who, because of low or irregular income, were tied to a particular shop because they needed to receive credit, were also particularly vulnerable to the fraudulent activities of some shopkeepers. As Geoffrey Crossick notes, 'adulteration of produce was notorious amongst those retailers selling to the working class, and the credit system was the lynchpin of their success'.[73] Such shopkeepers could remain confident that indebted customers would continue to patronise them without complaint. Writing in 1845, Frederick Engels considered this lack of choice to be a very real factor in the supply of inferior and adulterated goods to the poorer classes. Engels saw adulteration as yet another way in which workers became victims of unscrupulous dealers and manufacturers.[74]

Market research designed to help the manufacturer sell more goods is a comparatively recent development. It is a complex area but basically it is a way of understanding why people behave as they do and how this affects what they purchase. Such research has shown that there are often firmly held traditional concepts as to what is 'good' and what is 'poor' and the public often prefer what is 'technically regarded as the inferior product'.[75] This was clearly displayed later

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[72] C.P. Hill, *British Economic History 1700-1939*, 1968, pp.15, 26.
[73] Geoffrey Crossick 'The petite bourgeoisie in nineteenth-century Britain: the urban and liberal case' in Geoffrey Crossick & Heinz-Gerhard Haupt (eds), *Shopkeepers and Master Artisans in Nineteenth-Century Europe*, 1984, p. 84.
[74] Frederick Engels, *The Condition of the Working-Class in England*, 1892. Engels notes how powdered rice and other materials were added to sugar, cocoa was adulterated with brown earth, which had been treated with fat to make it seem more like real cocoa, while 'the refuse of soap-boiling establishments also is mixed with other things and sold as sugar', p. 99.
[75] Harry Henry, *Motivation Research*, 1963, pp.1 - 3, p.15.

in the nineteenth century when 'mixtures' — items of food with added 'inferior' ingredients — continued to be sold because of public demand, despite the Adulteration of Food, Drink and Drugs Act, 1872, which aimed to control their sale. Stephen Mennell discussing tastes in food, notes that these are often dictated by social and cultural influences and one 'superficial explanation' may be that 'people like what they are used to', even if this means choosing a less healthy option.[76] Regional differences in food tastes were also an important consideration, particularly when nineteenth-century manufacturers contemplated changing the taste or appearance of certain products. For example, twentieth-century research showed that darker colours, both for food and drink, were preferred in the north of England while in the Midlands there was a strong preference for all types of pickles and more bitter drinks.[77]

While many consumers displayed a distinct preference for food items because they liked the appearance or taste, another issue determining consumer choice at this time was that mid-Victorian England was preoccupied with 'poisoning as a social hazard'.[78] It is understandable that the public were wary of new products that had a different look or taste when the press was full of shocking cases of murder by poisoning.[79] As Michael Diamond notes; the '1850s saw the

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[76] Stephen Mennell, *All Manners of Food: Eating and Taste in England and France from the Middle Ages to the Present,* 1985, pp. 4 - 5.
[77] D. Elliston Allen, *British Tastes,* 1968, pp. 32,117.
[78] F.N.L Poynter (ed) *Medicine and Science in the 1860s*, 1968, p. 302.
[79] One of the most famous poisoners was William Palmer the 'Rugeley Poisoner' who was alleged to have poisoned at least fourteen people including his wife and brother, and who was hanged in 1856. Thomas Boyle, *Black Swine in the Sewers of Hampstead,* 1990, p. 62. Katherine Watson, *Poisoned Lives*, 2004, pp. 102-104.

poisoner's rise to prominence. Those who weren't worried about being stabbed or shot were afraid of being poisoned'.[80]

Other Groups and the Adulteration Issue

The Co-operative movement was just one of a number of groups that began to focus attention on the adulteration issue at this time. Chemists of the Inland Revenue in particular were becoming increasingly concerned about the problems of adulteration. Established in 1842, the Excise Laboratory was initially tasked solely with the detection of adulterants in tobacco. Revenue had been raised on tobacco since it was first imported commercially in the late-seventeenth century. By adulterating the product the trader could recoup some of his costs and increase profits.[81] Many manufacturers became skilled in adulterating tobacco and in 1842 the Pure Tobacco Act was introduced in an attempt to control this. Following this Act, it was recognised that the Board of Excise needed some scientific means to detect adulteration in order to enforce the new legislation. This was made possible by establishing the Excise Laboratory and the department was soon examining many other excisable commodities, including beer, wine, spirits, coffee, tea, chicory and pepper.[82]

Of particular importance at this time was the interest shown by medical men in the adulteration issue. The 1840s was a time when doctors began to voice their

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[80] Michael Diamond, *Victorian Sensation*, 2004, p.165
[81] P.W. Hammond and Harold Egan, *Weighed in the Balance: A history of the Laboratory of the Government Chemist*, 1992. p. 5.
[82] Hammond and Egan, pp. 33 - 35, p. 11.

concerns about adulteration and the effects of such practices on the health of the population. This concern was part of the increasing influence of the medical profession on public health reform as witnessed by the introduction of vaccination against smallpox for infants in 1840, and followed on from medical involvement in cholera epidemics earlier in the century, which had inspired movements for sanitary reform.[83] Concerns about social conditions that could affect public health — and this would later include adulteration — were brought to a wider audience by the medical journal and crusading periodical, *The Lancet*, first published in 1823.

The Lancet's Analytical Sanitary Commission 1851-1854

The Lancet's first editor was Thomas Wakley (1795-1862), the medical reformer and radical. Wakley used the journal to publicise many social issues including the adulteration problem. He was an avid campaigner for greater democracy in the medical profession and also served as Coroner for West Middlesex from 1839 to 1871. He was Radical MP for Finsbury between 1835 and 1852 and it is some measure of his commitment to reform causes that during the seventeen years he was in the Commons, he presented 310 petitions on reform subjects and 132 motions calling for legislation.[84] Wakley first showed an interest in the adulteration issue in 1831, when he commissioned an investigation into the adulteration of confectionery. The results, published in the journal with the arresting title of 'Poisoned Confectionery', revealed the dangerous practice of

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[83] Brand, 1965, p. 2. Anne Hardy, *Health and Medicine in Britain since 1860*, 2001, pp. 29 - 30.
[84] *Biographical Dictionary of Modern British Radicals*, **2,** 1830 - 1870.

using poisonous substances to colour sweets as well as the use of poisonous materials as sweet wrappers.[85]In 1851, *The Lancet* announced the setting up of the Analytical Sanitary Commission to investigate the adulteration problem.[86] As the journal made clear this was to be a most thorough investigation that would provide a 'valuable service to the community'. The journal warned traders that fraudulent activities were likely to be uncovered but emphasised that the investigation would be carried out with 'complete impartiality':

> Let not any tradesmen, mechanic or manufacturer, imagine for a moment that he can defeat our vigilance. We bring the microscope and the test-tube — those simple but mighty instruments of modern investigation — to bear with unerring truth upon things hidden and secret enough from the observation of the unaided senses. These instruments, assisted by the powers of chemistry and structural botany and anatomy, are our detective police...[87]

Creating an image of *The Lancet* investigators as 'detective police' was a clever strategy on Wakley's part that undoubtedly drew attention to the campaign. With the appointment of London's first detectives in 1842, the detective as investigator was an image very much in keeping with the times. By the 1850s, detective

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[85]This investigation was undertaken by W. B. O'Shaunessy, a recent medical graduate who analysed samples of confectionery. 'Poisoned Confectionery', *The Lancet*, **2**, 1830-1, p.193.
[86] Why there is a twenty year gap between Wakley's earlier interest in adulteration and *The Lancet* investigations is not clear. However, Ernst Stieb has noted that in later correspondence to *The Times*, Wakley himself suggests that apprehension about the legal consequences of publishing the names and addresses of those guilty of adulteration prevented him from embarking on the investigations at an earlier date. Stieb, p. 178.
[87] 'Leading Article', *The Lancet*, **1**, 4 January 1851, p. 18.

policemen had also started to appear in popular literature.[88] Concerns about Continental 'spy-systems' and the fact that the new detectives operated in plain-clothes became the subject of much concern and debate.[89] These concerns would be transferred to the adulteration issue. In the late 1850s, when questions of control were raised, there was particular resistance to the idea that official inspectors be used to collect food samples, many of whom would be police constables and whose future role was seen by some as one of 'informing and spying on the public'.[90]

Wakley continually stressed how *The Lancet* investigations would be quite unlike any other. Not only would they be based on 'actual observation and experiment' but would also include engravings to show clearly the microscopic structure of both adulterated and pure samples. Wakley also intended to publish the names of all tradesmen from whom samples had been gathered, so both honest and dishonest dealers would be cited.[91]

The determination on Wakley's part to approach the adulteration problem in such a pragmatic way, reflected an increasing trend in the nineteenth century when investigations into aspects of society that were causing concern relied less on personal observations, but 'aimed to replace "opinions" with "empirical" facts'.[92] From the beginning of the nineteenth century there was an increasing interest in

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[88] Clive Emsley, *Crime and Society in England, 1750-1900,* (fourth impression) 1991, p.190. Clive Emsley, *The English Police*, (second edition), 1996, p. 71.The most famous fictional detective at this time was Inspector Bucket in Charles Dickens' *Bleak House*, 1853.
[89] T. A Critchley, *A History of Police in England and Wales,* (revised edition) 1979, pp. 160-161.
[90] *Hansard*, cliv, May-June 1859, p. 846.
[91] 'The Analytical Sanitary Commission' *The Lancet*, **1**, 1851, p. 21.
[92] G.M. Young, *Portrait of an Age: Victorian England*. 1977. Quoted by Dorothy Porter in *Health Civilization and the State*, 1999, p. 65.

numerical data and the use of statistics as a means of measuring 'social inequality' and discovering ways to control disease. This interest was reflected in the foundation of the Statistical Society of London in 1834, which became the Royal Statistical Society in 1887.[93]

The first stages of *The Lancet* investigations would last until 1854 and were initially confined to London. Wakley made himself responsible for all the costs involved, such as the purchase of samples and payments to analysts. He was also prepared to fund all legal costs should litigation arise. The Commission employed the services of Henry Letheby (1816-1876) and Arthur Hassall (1817-1894). Letheby was an analytical chemist and lecturer in chemistry at the London Hospital, who was particularly interested in gas and water analysis. In 1855 he would be appointed as Medical Officer of Health (MOH) and Public Analyst for the City of London. Arthur Hassall was a medical doctor, zoologist and botanist, but was becoming better known for his expertise as a practical microscopist. His reputation was enhanced when, in 1850, he earned the praise of Edwin Chadwick for his scientific expertise in the campaign to improve the quality of London's water supply.[94] Chadwick reportedly used Hassall's reports to present unequivocal evidence that London's drinking water was contaminated.[95]

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[93] Porter, 1999, pp. 70 - 78.

[94] Edwin Chadwick (1800-1890) British social reformer and civil servant. Largely responsible for the Poor Law Amendment Act of 1834. In his influential 1842 *Report on the Sanitary Condition of the Labouring Population*, Chadwick emphasised the connection between disease and environmental conditions and highlighted the inadequacies of existing sanitary conditions in England. He put forward a detailed programme of reform that would culminate in the Public Health Act of 1848. *The Oxford Dictionary of National Biography*, 2004.

[95] Ernest Gray, *By Candlelight: The life of Dr Arthur Hill Hassall, 1817-94*, 1983, pp. 7, 90. E.G. Clayton, *A Memoir of the late Doctor Arthur Hill Hassall*, 1908.

The inclusion in *The Lancet* investigations of two men already valued for their involvement with water pollution is an indication of the much broader sweep of environmentalism at this time. With the formation of groups such as the Metropolitan Health of Towns Association in 1844, a whole range of problems including atmospheric pollution, inadequate sewerage systems, poor water supply and inadequate housing were now considered as important contributory factors to patterns of ill-health. Increasingly, standards of nutrition and the quality of the food supply would also play an important part in these considerations. The formation of a group to investigate the effects of adulteration at this time was an important step in this process.

Arthur Hassall also had his own professional reason for assisting *The Lancet* investigations as he had already been involved in a food adulteration controversy. This concerned the adulteration of coffee with chicory. From 1840 the Treasury had allowed the sale of coffee and chicory mixtures, as a result less coffee was sold. This concerned coffee traders, retail dealers and planters. It also concerned the Excise Department as both coffee and chicory were subject to duty but less was payable on chicory.[96] In 1850 the Chancellor, Sir Charles Wood, responding to concerns about declining sales and fears that adding chicory to coffee was adversely affecting the public health, dismissed these concerns stating that he 'did not believe the use of chicory by itself with coffee was in the slightest degree prejudicial to health...'.[97] While chicory was not itself harmful, and still continues to be added to coffee, as *The Lancet* investigations in

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[96] Between 1860 and 1862 in an effort to control adulteration the government increased the duty on chicory to equal that of coffee. Hammond and Egan, pp. 40 - 42.
[97] *Hansard's Parliamentary Debates,* third series, vol.cxi, May 23 1850, p. 270.

the 1850s would reveal, it was the nature of the adulterants added to chicory that were problematic. The Chancellor also considered that such practices reduced the cost of coffee to the poor and that, contrary to popular opinion, the adulteration of coffee with chicory increased consumption. However, his most contentious statement, especially for the scientific community, was that it was not possible to detect chicory in coffee; '...neither by chemical nor by any other mode could it be ascertained with any degree of certainty whether a mixture contained chicory or not'.[98] As a microscopist, Hassall found the Chancellor's statement to be of particular interest and was anxious to prove the assertion wrong. In 1850 Hassall read a paper on coffee and its adulteration to the Botanical Society of London. This paper came to the attention of Wakley who was anxious to use Hassall's expertise in *The Lancet* investigations. Commenting on the coffee issue, Ingeborg Paulus observes that 'the confrontation between a high-ranking government official and a representative of science caught the imagination of the analytical-medical profession and the public'.[99]

Between 1851 and 1854, *The Lancet* Commission analysed 2,646 samples of thirty of the most common items of food, drink and drugs. Wakley emphasised that sample collection would be as impartial as possible. Two persons were to be sent out for this purpose, including on some occasions Hassall himself. As Hassall noted, the articles were to be purchased 'as sold in the ordinary way of

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[98] *Hansard,* **3**, 23 May 1850.
[99] Paulus, p. 23.

business'.[100] He was also anxious that samples be gathered in a 'strictly impartial' manner. As an example, he explained that when collecting samples of coffee these were 'procured from every shop that was noticed on both sides of the way...' which 'proves that we have not made any selection either of dealers or localities...'.[101] Between twenty and forty samples of any one article were purchased and analysed before any report was written.[102]

The initial findings of the Commission confirmed what had long been suspected; that almost every item of food, drink and drugs sampled was adulterated, in many cases with poisonous substances. Of particular concern was the nature of substances used to add colour to food. From one hundred samples of confectionery, many were found to contain hazardous chemicals such as white and red lead, ferrocyanide, lead chromate and lead oxide, as well as carbonate of copper and arsenate of copper. Over half the samples of pepper tested by the Commission were adulterated with pepper dust, sweepings from the floor or other 'undesirable elements'. Copper was found in all samples of pickles, while 'highly dangerous amounts' were detected in bottled fruits such as gooseberries and rhubarb.[103] On the other hand, despite frequent allegations that sheep's brains were used to adulterate milk, the Commission found no evidence of this

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[100] Arthur Hill Hassall, *Adulterations Detected*, 1857, p. 33.
[101] Arthur Hill Hassall, *Food and its Adulterations*, 1855, p. 526. This work contained all the results of *The Lancet* investigations.
[102] Evidence of Arthur Hassall, *Report from the Select Committee on Adulteration of Food*, First Report 1855, (432) VIII, Q.11.
[103] Following *The Lancet* investigations which had highlighted the extensive use of copper to add colour to pickles, Thomas Blackwell the pickle and sauce manufacturer, had voluntarily stopped boiling the vinegar used for pickles and sauces in copper vessels and instead had started to use iron vessels coated with glass. As a result the pickles no longer had a bright green colour. However, Blackwell had great difficulty getting the public to accept the new product. He eventually succeeded, but only after a significant drop in trade. *Select Committee on Adulteration of Food*, 1855, First Report, (432) VIII, evidence of Thomas Blackwell, Qs. 1563-1600.

and in the twenty-six samples analysed, only adulteration with water was found.[104] The Commission also highlighted a problem first noted by Accum, namely the difficulty of establishing exactly where in the supply chain the adulteration had occurred. Many traders identified by *The Lancet* investigations as selling adulterated items, considered they had bought the articles in good faith and were therefore not responsible for the adulteration.[105]

While many adulteration practices had been known for some time, new and somewhat alarming frauds were revealed by the Commission, especially the range of adulterants added to coffee. Furthermore, while the Commission found most coffee to be adulterated with chicory, this itself was also adulterated and might contain 'burnt peas', 'dog biscuit', 'powdered earth' and, as *The Times* noted, 'other materials too horrid to mention'.[106] In 1852 a correspondent to *Household Words* claimed that chicory was also sometimes adulterated with even more undesirable substances such as 'spent tan' and 'red ochre'. As the correspondent noted, red ochre was used to colour the floors of cottages. He alleged that 'wagon loads' of this substance had been seen at the door of a 'well-known and extensive " coffee manufacturer" '.[107] Hassall also noted that other questionable substances were being sold as 'coffee'. He reported that in some parts of London, 'liver-bakers' were taking the livers of horses and oxen, baking them, then grinding them to a powder to be sold to 'low-priced coffee-shop keepers, at from fourpence to sixpence per pound'; the highest price being paid

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[104] Hassall, 1855.
[105] Letter to the Editor from Mr Hart, *The Lancet,* **1**, 1851, p.185.
[106] 'Money-market and City Intelligence *The Times,* 12 March 1851, p. 6, col. c.
[107] 'Constitutional Trials', *Household Words,* **5**, 1852, p. 52.

for 'horse's-liver coffee'.[108] Hassall also reported the existence of a 'factory' in one suburb of London which was making chicory entirely out of roasted carrots, while another 'factory', was adulterating chicory with 'spoiled ship-biscuit roasted'.[109] There seemed to be no end to the ingenuity of those anxious to benefit from adulteration. In 1851 a Mr. Duckworth of Liverpool took out a patent for 'forming, moulding and compressing chicory into pieces in the shape of berries'.[110] The deception was apparently cleverly done as, to the unpractised eye, the compressed chicory passed as coffee.[111] So many forms and varieties of adulteration illustrate what was noted earlier in the chapter that adulteration was a complicated issue and grasping its many complexities was not always a straitforward matter for contemporaries. At one end of the spectrum adulteration could mean the addition of relatively innocuous ingredients to add weight or bulk, or the complete fabrication of ingredients to mimic the genuine, while at the other end of the spectrum substances, often poisonous, might be added to achieve a particular look or taste.

Such revelations generated a great deal of interest in the adulteration issue. *The Lancet* received numerous letters praising the Commission's efforts and the investigations received extensive publicity, both in the daily press and other journals. These reports praised both the work of the Commission and the

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[108] Hassall, 1855, p. 201.
[109] Hassall, 1855, p. 526.
[110] Frederick John Robinson, (Viscount Goderich), 1852.
[111] *Select Committee on Adulteration of Food,* 1855, Second Report, (480) VIII, Qs. 2135 - 2141.

courage of Wakley in setting up the investigation.[112] *Punch* in particular devoted a great deal of coverage to the issue including a number of particularly scathing articles and emotive illustrations. In a series of articles entitled 'Sermons to Tradesmen', the journal directed its attacks on what it called the 'Imps of all Trades'.[113] Charles Dickens, a friend and admirer of Wakley, lent his influence to the reform campaign by including many references to *The Lancet* investigations and to adulteration in general, both in his novels and in *Household Words,* of which he was editor.[114] In 1852 Henry Morley, a contributor to *Household Words,* summed up *The Lancet's* findings on the all pervasive nature of food adulteration; '...whatever the British consumer may feel inclination to devour let him devour it at his peril; he will himself be thereby preyed upon, devoured, consumed...'.[115] The extensive publicity given to the Commission's findings, in language that was easy to understand, did much to bring the subject of adulteration to the attention of those sections of the public who would not have been readers of professional journals such as *The Lancet.* Increased rates of literacy also helped. One estimate puts literacy by the 1840s at between two-thirds to three-quarters of the working-class population of England. By the middle of the nineteenth century there was a far greater range of newspapers and their

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[112] *Manchester Guardian*, 11 January 1851. 'Money-Market and City Intelligence' *The Times*, 22 May 1851, p.6, col.c. 'The Analytical Sanitary Commission of *The Lancet*', Letter to the Editor from T.H. Henry, *The Times*, 30 July, p. 7, col. d.
[113] 'Sermons to Tradesmen', *Punch,* **20**, 1851, p. 3.
[114] William F. Long, 'Dickens and the Adulteration of Food', *The Dickensian*, **84,** 1988, pp.160-170. *Hard Times*, 1854, p.163. 'Refreshments for Travellers', *The Uncommercial Traveller,* 1860, p. 53. *Little Dorrit,* 1857, p.144.
[115] Henry Morley, 'Constitutional Trials', *Household Words*, **5,** 1852, pp. 423-426, p. 423.

circulation had increased dramatically while the same was also true of periodical literature.[116]

The Lancet investigations and the adulteration issue also focused attention on medical men, such as Wakley who were striving at this time for medical reform and improvements in professional status. The Medical Act of 1858 would establish a register of qualified practitioners while the Provincial Medical and Surgical Association founded in 1832, which in 1855 would evolve into the British Medical Association (BMA), always had as its aim to secure 'a satisfactory legal framework within which properly qualified practitioners could practice medicine free from the competition of quacks'.[117] Founded in 1840 the *Provincial Medical and Surgical Journal* was adopted by the BMA as its official journal becoming the *British Medical Journal* (BMJ) in 1857. As Peter Bartrip notes, the outlook of the *Journal* was 'predominantly introspective' with its main function being 'as a propagandist of the BMA in the struggle for professional advancement'.[118] Such an outlook might explain why the adulteration issue received limited coverage. As Peter Bartrip comments, although the *Journal* supported anti-adulteration legislation 'it was, in its treatment of the subject in the 1850s, only hanging on to the *Lancet's* coat tails'.[119]

Throughout the investigation, Wakley continually stressed its thoroughness and the skilful presentation of accurate scientific evidence. He noted how the policy

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[116] Robert. K. Webb, 'Working Class Readers in Early Victorian England', *The English Historical Review*, **65**, 1950, pp. 333-351, p. 349.
[117] Peter Bartrip, *Themselves Writ Large: The British Medical Association 1832-1966*, 1996, p.70.
[118] P.W.J. Bartrip, *Mirror of Medicine: A History of the British Medical Journal*, 1990, p.61.
[119] Bartrip, 1990, p.160.

of publishing names had been a useful move and that 'many hundreds' of manufacturers and tradesmen had been named.[120] Wakley himself felt this to have been one of the most important aspects of the Commission.[121] However, many traders reacted very angrily to the publishing of names as a comment contained in the *Quarterly Review* of 1855 indicated; '...a gun suddenly fired into a rookery could not cause a greater commotion than did the publication of the names of dishonest tradesmen...'.[122] The naming of dishonest tradesmen made Wakley very unpopular and he received a number of personal threats. However, no successful court action was brought by those contesting the Commission's findings during the entire period of the investigation. John Burnett suggests that this fact confirms the 'complete accuracy of the analyses' performed by the Commission.[123] F.B Smith also values Hassall's contribution providing as he did 'in microscopy, the first sure means of detecting and legally proving adulteration'.[124] Michael French and Jim Phillips agree and note that Hassall's articles 'supplied an unprecedented degree of systematic, scientific information which exposed the extent of food adulteration and its implications for public health'.[125]

A more recent analysis however, questions the view that Hassall was a dispassionate and professional scientist and doubts his objectivity in testing for adulterants. S.D. Smith argues that an examination of Hassall's methodology of

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[120] Leading Article, *The Lancet,* **1**, 3 January 1852, p.17.
[121] *Select Committee on Adulteration of Food,* 1856, (379) VIII, Q. 2219.
[122] 'Food and its adulterations', *Quarterly Review*, **96**, March 1855, p. 461.
[123] Burnett, 1989, p. 217.
[124] F.B. Smith, *The People's Health 1830-1910*, 1979, p. 208.
[125] French and Phillips, 2000, p. 33.

sample collection and his interpretation of microscopic results raise questions about previous evaluations. While agreeing that Hassall's use of the microscope in the investigations in which 'visual representations of adulteration challenged the doubters to see the evidence of fraud and corruption with their own eyes', he suggests that the absolute accuracy of Hassall's observations has to be questioned.[126] As Smith notes, when visual illustrations to accompany reports of coffee adulteration were presented to *The Lancet* Commission, Hassall did not 'provide a detailed description of the methods he used...or even of the magnification employed'.[127] Smith's argument is supported by an examination of Hassall's evidence to the 1851 Select Committee on the Metropolis Water Bill.[128] This Committee seriously challenged the reliability of Hassall's earlier work on London's water supply, in particular the accuracy of his drawings of organisms found in this water.[129] Such was the concern expressed by the Committee over the methods used by Hassall in this investigation that they expressed the opinion that the public had been 'deceived' by his findings.[130] As Smith notes, these concerns raise questions about the reliability of Hassall's microscopic work and his engravings of coffee adulteration which appeared in *The Lancet.*[131]

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[126] S.D. Smith, 'Coffee, Microscopy, and *The Lancet's* Analytical Sanitary Commission', *Social History of Medicine*, **14**, (2), 2001, pp.171-197, p.185.
[127] S.D. Smith, p.189.
[128] *Select Committee on the Metropolis Water Bill*, 1851, (643) XV, Qs. 3852-4118.
[129] Hassall, Arthur Hill, *Microscopical Examination of the Water Supplied to the Inhabitants of London and Suburban Districts*, 1850. This issue has been discussed by Christopher Hamlin, *A Science of Impurity*, 1990, p.104.
[130] During the hearings of the *Select Committee on the Metropolis Water Bill,* 1851, (643) XV, this view was put to Hassall by Sir James Graham Q. 4020. While the Committee expressed concern about the accuracy of Hassall's drawings of microscopic life, they also questioned his methods of obtaining water samples which in some cases involved the use of un-rinsed wine bottles. Qs. 3970-3990. Independent examination of Thames water found no evidence of the 'animals' described by Hassall. Q. 4036.
[131] S.D. Smith, p. 191. In a recent MA thesis, Berris Charnley questions whether Hassall's work for *The Lancet* Commission was 'scientific' and if his role in bringing about legislation to control adulteration has been overestimated in general accounts of adulteration. Berris Charnley, 'Dr.

In spite of questions concerning its reliability, Hassall's work for *The Lancet* Commission made a strong impact on nineteenth-century society. It is an example of the great expansion during that century of science into public affairs.[132] Recent studies have focussed in particular on the debates concerning expert witnessing and disagreements that occurred among professionals during the second half of the nineteenth century.[133] Such disputes had important implications when it came to bringing about successful convictions for adulteration offences and will be discussed in more detail later in this thesis.

Despite a great deal of publicity given to subsequent disagreements between Wakley, Hassall and Letheby as to who should be credited with contributing most to the campaign, there is little doubt that *The Lancet* investigations achieved a great deal.[134] By reporting on both the number of samples analysed and the number of adulterations found, *The Lancet* attempted to quantify the extent of the problem; a feature absent in Accum's investigations. The authority of the investigation was also enhanced by the professional standing of those involved, particularly Thomas Wakley. He came to the campaign well-known for his

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Arthur Hill Hassall, the Analytical Commission and the Origins of Food Analysis: A re-examination of the "food adulteration crisis" in the 1850s'. 2005.

[132] Roy Macleod, *Public Science and Public Policy in Victorian England*, 1996.

[133] Christopher Hamlin, 'Scientific Method and Expert Witnessing: Victorian Perspectives on a Modern Problem'. *Social Studies of Science*, **16**, 1986, pp. 485- 513. Tal Golan, 'The History of Scientific Expert Testimony in the English Courtroom', *Science in Context*, **12,** (1), 1999, pp. 7-32. Thomas L. Haskell (ed), *The Authority of Experts,* 1984.

[134] Wakley was particularly offended when a book written by Hassall, *Food and its Adulterations* (1855) reiterated the Commission's findings and gave the impression of being entirely the work of Hassall. *The Times* reported regularly on the dispute; 'Adulteration of Food', Letter to the Editor from H. Letheby, *The Times*, 30 July 1855, p. 7, col. c. In the same edition is a Letter to the Editor from Thomas Wakley, p. 7, col. d. 'Dr. Hassall and Mr Wakley', Letter to the Editor from Arthur Hassall, 31 July 1855, p.12, col. d. 'Adulteration of Food'. Letter to the Editor from H. Letheby, 2 August 1855, p.12, col. f. Further details of this dispute can be seen in James Caesar Durnford, John A. Power, Raymond S. Daniell, *The correspondence relating to the Lancet Sanitory* (sic) *Commission,* 1856, British Library (BL) Microfilm.

personal integrity and for being a fearless reformer; an image confirmed by the bold way he published names of those found guilty of adulteration.[135] The campaign also raised general awareness of adulteration and provided a platform for discussion, while the regular publication of reports sustained public interest during the campaign. As Ingeborg Paulus observes, this publicity 'began to create a genuine public involvement in the subject of adulteration'.[136] The Commission also gave greater credibility to the claims of anti-adulteration campaigners and by doing so *The Lancet* investigations were to become an important contribution towards food reform.

Adulteration and Health

The results of *The Lancet* investigations indicated that adulteration was both extensive and many of the adulterants poisonous. These findings would seem to suggest that adulteration was likely to have a very detrimental effect on health. However, while this seems extremely likely, the lack of information to indicate that adulteration was definitely a causal factor in morbidity or mortality, makes it difficult to point to any definite conclusions on this aspect. Writing in *The Lancet* in 1857, the prominent epidemiologist Dr John Snow, suggested that the prevalence of rickets among children in London might be attributed to the adulteration of bread with alum.[137] The most dangerous adulterants were

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[135] Edwina Sherrington, *Thomas Wakley and Reform 1823-62.* Unpublished D. Phil., University of Oxford, 1973.
[136] Paulus, p. 23.
[137] In Snow's opinion, alum was likely to decompose phosphate of lime, a substance present in wheat and needed for the calcification of bone. John Snow 'On the adulteration of bread as a

colouring materials used to improve the appearance of an article or to conceal the use of other adulterants. Some examples of poisonous adulterants noted by Hassall were chromate of lead added to custard powder, red lead and mercury added to cayenne pepper, while confectionery would often contain a whole range of poisonous adulterants to give products the vivid colour demanded by the public, such as red lead, prussian blue, carbonate of copper, arsenate of copper and white lead.[138] As Anthony Wohl observes, the list of poisonous additives used to adulterate goods at this time 'reads like the stock list of some mad and malevolent chemist'.[139] Many of the poisons used had cumulative effects which could, over time, lead to severe debility or even death. Hassall certainly recognised this fact observing that some metals, such as lead and mercury, used to adulterate goods, might well cause problems later, if allowed to accumulate in the body.[140] The dangers of cumulative assimilation were of particular concern with arsenic as this was used in a whole range of domestic products and food items including wallpaper, toys, medicines, food packaging, confectionery and the colouring of blancmange.[141] During the 1840s and 1850s, the medical profession expressed concern about the unregulated sale of arsenic where misuse was causing many fatalities among the public.[142] The campaign to introduce legislative controls on the sale of arsenic, resulting in The Arsenic Act

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cause of rickets', first published in *The Lancet* **2**, 1857, pp. 4-5, reprinted in *International Journal of Epidemiology*, **32**, 2003, pp.336-337.

[138] Hassall, 1855.

[139] Wohl, p. 53.

[140] Evidence of Arthur Hassall, *Select Committee on Adulteration of Food*, 1855, First Report, (432) VIII, Q. 34.

[141] P.W.J. Bartrip, 'How Green was my Valence? Environmental Arsenic Poisoning and the Victorian Domestic Ideal', *English Historical Review*, **109**, September 1994, pp. 891-913, p. 895.

[142] In 1848 at a public dinner in Northampton, a number of people were taken ill and one subsequently died after eating 'green' blancmange which had been coloured with arsenate of copper, 'Wholesale Poisoning at Northampton—Alarming and Fatal Occurrence', *The Northampton Herald*, 10 June 1848, p.3, col. d.

1851, had many parallels with the adulteration issue raising similar questions about the necessity, or otherwise, of State intervention to control 'intolerable' conditions.[143] During the 1850s, when concerns about the health hazards of arsenic used to colour wallpaper were fiercely debated, many of those involved in *The Lancet* investigations were also involved in the arsenic issue.[144] As Peter Bartrip notes, it has even been suggested that Wakley 'had himself been a victim of arsenic poisoning, following the redecoration of his journal's Strand offices with green wallpaper'.[145]

While Hassall drew particular attention to harmful adulterants, some adulterants were not harmful such as those used to impart smell or flavour, for example cayenne pepper or cinnamon added to gin to disguise the fact that it was diluted with water. In the same way water, which was often used to adulterate milk, may not be seen as particularly harmful but in the nineteenth century this water was of poor quality being dirty and contaminated.

The adulteration of beer and spirits was also widely practised. Opium and other chemicals enhanced the effects of beer, making it both stronger and more bitter.[146] Many of these substances were poisonous and produced severe side

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[143] Peter Bartrip, 'A "Pennurth of Arsenic for Rat Poison": The Arsenic Act, 1851 and the Prevention of Secret Poisoning', *Medical History,* **36**, 1992, pp. 53 - 69.

[144] Hassall, Wakley and Letheby were all involved in the issue. Hassall initially defended the wallpaper manufacturers stating that 'killer wallpaper' was a delusion. He modified this stance when in 1860 Letheby analysed a 'six-inch square of paper' and found it to contain 'sufficient arsenic to kill two adults'. Bartrip, 1994, p. 902.

[145] Bartrip, 1994, p. 902.

[146] In 1900 at least seventy people died and many more became ill following the contamination of beer with arsenic. This event and the Pure Beer Campaign of the 1890s are discussed in detail by Jim Phillips and Michael French, 'The Pure Beer Campaign and Arsenic Poisoning, 1896-1903', *Rural History*, **9,** (2),1998, pp.195 - 209.

effects. *Nux vomica* (strychnine) produced hallucinations when used repeatedly, while *cocculus indicus* (dried seed of the *Anamirta Cocculus* from the East Indies) was a bitter poison that affected the central nervous system causing confusion and convulsions.[147] Later in the century there were allegations that many violent crimes might be attributed to the effects of adulterated beer, while it was also felt that many 'pauper lunatics' owed their condition to it.[148]

While adulteration was a serious problem for the general population, for those in institutions, such as prisons and workhouses who were already receiving a nutritionally inadequate diet, the problem was even more serious. Food for institutions was supplied on contract and it was only too easy for dishonest suppliers to make a little extra money by adding inferior ingredients. Anxious to win contracts, tenders would often be ridiculously low and could only be supplied at that price if the goods were adulterated. One of the most publicised scandals illustrating this problem occurred in 1849 at Drouet's Pauper Institution in Tooting where 130 children died from cholera. It later emerged that the oatmeal supplied to Drouet's had been adulterated with barley meal; a far less nutritious substance. Because of this it is likely that the children would, over time, become malnourished and less able to resist epidemic disease.[149] As Valerie Johnston observes, in institutions there was always a fine line between making diets as

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[147] F.B. Smith, 1979, p. 210.
[148] Wentworth L. Scott, 'Food Adulteration and the Legislative Enactments Relating Thereto', *Journal of the Society of Arts,* **23,** April 1875, p. 432.
[149] Giving evidence to the Select Committee on Adulteration of Food in 1855, Arthur Hassall had no doubt that the adulteration of oatmeal at Drouet's Institution, '...had a great deal to do with the illness of the children'. *Select Committee on Adulteration of Food*, 1855, First Report, (432) VIII, Q. 22.

unattractive as possible in order to deter new admissions, while at the same time it was important to keep the inmates from starvation.[150]

Dr John Postgate (1820-1881)

While *The Lancet* investigations did much to publicise the problems of adulteration, the 1850s was also a time when individual food reformers were coming to prominence. One of the most important was a Birmingham surgeon, John Postgate, who did much to focus attention on the adulteration issue and who has been credited with initiating the first government enquiry to investigate the problem.[151] Born in 1820, Postgate had worked as a grocer's boy and seen at first-hand some of the more dubious practices of the trade.[152] These experiences left a lasting impression and Postgate left the trade and apprenticed himself to two doctors, eventually becoming a surgeon in Birmingham. His great interest was public health, food adulteration in particular. In 1854 he set up an association in Birmingham and a committee in Wolverhampton expressly for the purpose of drawing attention to the adulteration problem. Members of these bodies included doctors, clergy and lay persons. Postgate used practical methods to demonstrate the problems of adulteration. Holding meetings in large towns, he exhibited samples of adulterated goods purchased from local retailers, which the public could look at and examine. He continually agitated for government intervention to control the problem and always expressed the

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[150] Valerie J. Johnston, *Diet in Workhouses and Prisons 1835-1895*, 1985, p. 5.
[151] John Postgate, *Lethal Lozenges and Tainted Tea: John Postgate and the Crusade for Safe Food*, 2001.
[152] John and Mary Postgate, *A Stomach for Dissent,* 1994, p.10.

opinion that adulteration was not an inevitable consequence of trade competition.[153]

Through the pages of *The Lancet*, Postgate called upon his medical colleagues to follow his example and set up committees in towns to consider the problem of adulteration.[154] In 1854 he put forward a proposal to William Scholefield, one of the MPs for Birmingham, that the control of adulteration should rest with public analysts appointed by the Town Council. He outlined how this role might operate and displayed a great deal of foresight by detailing some of the problems that might arise when controls were finally implemented.[155] At the time Postgate was rallying support for his reform proposals, a number of petitions were submitted to Parliament on behalf of various associations also requesting some action on the adulteration issue, including one by Postgate's own association in Birmingham.[156] Postgate's efforts to rally support for his reform proposals and attempts to interest local MPs in the issue of adulteration were eventually successful. He persuaded the Liberal MP, William Scholefield, to move for a

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[153] 'Adulteration of Food and Drugs — Meeting at Scarborough', *The Lancet,* **2**, 1855, p.334. Adulteration of Food and Drugs', *The Lancet,* **2**, 1854, p. 492. 'Adulteration of Food', *The Times,* 26 April 1854, p. 7, col. f.

[154] 'Adulteration of Food and Drugs', *The Lancet,* **2**, 1854, p. 492.

[155] John Postgate, 2001, p. 33.

[156] 'Petition of the Committee of the Manchester and Salford Sanitary Association', No. 175, March 1855. 'Members of the Association formed at Birmingham for the Suppression of Adulteration of Food and Drugs', No. 2331, April 1855. 'Inhabitants of the Borough of Scarborough', 'Inhabitants of the City of London', February 1857. 'Members of the National Association of Civil and Health Engineers', March 1857. The numerous volumes containing public petitions have been seen at the British Library. Individual years have been accessed with the general reference, B.S. 91/6, *Reports of the Select Committee of the House of Commons on Public Petitions.*

Select Committee to enquire into the adulteration issue. This was set up in July 1855 and consisted of fifteen MPs, with William Scholefield as chairman.[157]

Select Committee on Adulteration of Food 1855

Between July 1855 and the publication of its final report in 1856, the Committee heard from nearly sixty witnesses with some giving evidence on more than one occasion. Witnesses included representatives of trade, both manufacturers and retailers. Among them were grocers, druggists and tea brokers as well as bakers and a miller. There were also medical officers of health and other members of the medical profession, together with analytical chemists and the Excise Chemists. From evidence given to the Committee, it is clear that each group had very different views on the issue and how it should be dealt with. This resulted in a number of acrimonious exchanges, all of which illustrated how difficult any consensus on the problem was going to be. It soon became clear that views about the severity of adulteration and the way in which controls might be effected would be less about finding some solution to the adulteration problem and more about reflecting and safeguarding the interests of specific groups.[158]

Giving evidence to the Committee, members of the medical profession such as Thomas Wakley, John Postgate and John Simon, Medical Officer of Health for the City of London, emphasised the dangers of adulteration and agitated for

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[157] *Select Committee on Adulteration of Food,* 1855. (432) VIII. The Committee would issue two reports in 1855 and a third in 1856.
[158] Paulus, p. 24.

reform because they saw it as an urgent health problem.[159] As a scientist, Hassall showed how improved methods of detection, especially use of the microscope, could be employed in controlling adulteration. He proposed the setting up of a central Board consisting of scientific analysts, microscopists and chemists in addition to the existing network of Excise Inspectors.[160]John Simon disagreed with these proposals and wanted to see adulteration controlled at local level by Poor Law Medical Officers. While many of these officials would not have been trained to undertake this task, Simon suggested that, before being employed, a course in analytical chemistry would serve this purpose. Simon also disliked the idea of Excise involvement, echoing a widespread feeling that these officers knew nothing about the effects of adulteration on health.[161]

The business community, in particular the grocers, played down the seriousness of the problem and stressed that they wished to avoid any government interference in what, to them, was simply a trade practice. Other witnesses also felt that the whole situation had been greatly exaggerated. One witness even considered that 'innocuous' adulterations should be allowed in order to reduce prices.[162]

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[159] John Simon (1816-1904) Surgeon and first Medical Officer of Health for the City of London (1848). A passionate advocate of reform in areas of public health such as housing, water supply, sewerage and food adulteration. In 1855 he was appointed as Chief Medical Officer to the General Board of Health and after the creation of the Local Government Board in 1871 headed the Medical Department. *Oxford Dictionary of National Biography,* 2004.

[160] Evidence of Arthur Hill Hassall, *Select Committee on Adulteration of Food,* 1855, First Report, (432) VIII, Qs. 222-223, 277, 333.

[161]Evidence of John Simon, *Select Committee on Adulteration of Food,*1855, First Report, (432) VIII, Qs. 792-799, 807, 856 - 862.

[162] Evidence of Richard Archer Wallington, Solicitor and Chairman of the Local Board of Health in Leamington, *Select Committee on Adulteration of Food,* 1855, Second Report (480) VIII, Q. 2517.

While it was not surprising that the business community would disagree on the severity of adulteration and strongly resist any interference in their trading activities, the seriousness of adulteration, especially as a health issue, was also played down by George Phillips, Principal of the Excise Laboratory in his evidence to the Committee. However, as concern about the scale of adulteration increased from the 1840s, there had been calls for the scientific expertise within the Excise Laboratory to be used in the detection of adulteration in both dutiable and non-dutiable items. In later chapters, the activities of this laboratory and the part it played in the control of adulteration, particularly its role following the 1875 Sale of Food and Drugs Act, which made the Excise Laboratory referees for disputed cases of analysis, will be discussed in more detail. It will be seen that one of the chief factors that prevented this laboratory playing a more prominent part in the control of adulteration, was the way in which the department viewed its own role; primarily that of revenue collection. Public analysts and others such as Arthur Hassall also questioned the professional competence of the chemists in the Excise Laboratory and their ability to be influential in the control of adulteration.[163] These perceptions early in the reform campaign were important, and would set the tone of mistrust and ill-feeling that would exist between public analysts and their scientific colleagues in the Excise Department, until the end of the nineteenth century.

Given the conflicting evidence presented to the Select Committee by various interest groups, it is not surprising that the Final Report published in 1856 was

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[163] *Select Committee on Adulteration of Food*, 1855, First Report, (432) VIII, Q. 187.

somewhat ambiguous On the one hand, the Committee endorsed the earlier findings of *The Lancet* Commission by agreeing that 'adulteration widely prevails' and was a danger to public health, as well as being a slur on the 'high commercial character' of the country.[164] On the other hand, the Committee seemed prepared to condone harmless adulterations regarding them as beneficial because they reduced prices. Because of this, the Committee concluded '...it would be difficult, if not unwise, for the Legislature to interfere'.[165]

Clearly, this conclusion indicated that government action on the adulteration problem would not be forthcoming. While such an outcome was disappointing for reformers, the Select Committee had the effect of focusing attention once more on the issue. The press gave full coverage to the Committee's findings with *The Times* reporting almost daily. The paper agreed that competition was one of the chief causes of adulteration and was being fuelled by the public 'rage for cheapness'. While not exonerating the dishonest tradesman, the paper viewed the public as instrumental in perpetuating adulteration by their false notions of cheapness.[166]

The Times also noted that while the desire for cheapness extended to all articles of food and drink, drugs were a particularly easy target for the adulterator. Although they will not be covered in this thesis, it is important to note that adulteration of drugs was practised extensively and would prove particularly difficult to control. While the public had some idea about the appearance and

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[164] *Select Committee on Adulteration of Food*, 1856, (379) VIII, p. iii.
[165] *Select Committee on Adulteration of Food*, 1856, (379) VIII, p. iv.
[166] Leading Article, *The Times*, 3 March 1856, p. 8, col. e.

taste of many food items, there was a certain mystique attached to the mixing and dispensing of drugs. Most people had little idea what medicines were composed of, or how they operated. In many cases one pill looked very much like another and appearances often gave little indication of composition.[167] As with other adulterated goods, low wages meant that many working-class families had no choice when it came to purchasing medicines. The corner shop was often the place where all purchases were made, including drugs.[168]

As well as press interest in the Committee's findings, a great number of books and pamphlets were published subsequently. Many re-iterated the findings of the Select Committee and warned of the dangers of adulteration.[169] In 1857, Arthur Hassall's own *Adulterations Detected; or Plain Instructions for the Discovery of Frauds in Food and Medicine* was published with a second edition in 1861. This publication was in response to the Select Committee recommendation that a simple guide was needed to help with the detection of adulteration and the book was intended to give the public plain instructions both 'microscopical and chemical' on ways of doing this.[170]

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[167] Leading Article, *The Times,* 25 August 1856, p. 6, col. e.
[168] Virginia Berridge and Griffith Edwards, *Opium and the People*, 1987, p. 91. While the 1852 Pharmacy Act introduced a register of pharmacists it was not until the 1868 Pharmacy Act that more comprehensive restrictions on the availability and sale of drugs and poisons was introduced. The passage of this Bill was influenced by competing professional interests in much the same way as legislation to control adulteration. Berridge & Edwards, pp.113-122.
[169] Examples of these are: J.D. Burn, *The Language of the Walls and a Voice from the Shop Window, or the Mirror of Commercial Roguery*, 1855. William Dalton, *Is Killing Murder? A Key to the Adulteration of our Daily Food,*1857, John Postgate, *A Few Words on Adulteration*, 1857.
[170] Hassall, 1857.

Voluntary Initiatives

In addition to the publication of books and articles on the adulteration problem, the findings of the 1855 Select Committee also stimulated more practical action, including voluntary initiatives. One little-known voluntary initiative, set up as a direct result of interest in the Select Committee, was The London Unadulterated Food Company. Founded in 1856, its members included several civil servants, a number of MPs and a Chief Analyst: Henry Letheby, Lecturer in Chemistry at the London Hospital and a prominent member of *The Lancet* enquiry. Shares in the company were advertised at £20 each, entitling shareholders to purchase goods at wholesale prices. The stated aim of the Company was to supply 'pure, wholesome and unadulterated food' to its shareholders with each article 'manufactured or prepared entirely by the company'. Exactly how the company proposed to do this is unclear. Goods were advertised countrywide and to be dispatched with the Company's guarantee of quality.[171] While such efforts appear to be a praiseworthy attempt to improve food quality, the company was not a success and was wound up in December 1857.[172] Not everyone was in agreement that the company had been a genuine attempt to counter adulteration. It was later suggested that the company's motives, as well as those of its Chief Analyst, had been less than honourable. The scheme it was felt, had simply been a financial fraud designed to give shareholders a 'handsome profit'.[173]

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[171] Several front page advertisements for the company appeared in *The Morning Post* during February and March 1857. *The Morning Post*, 28 February 1857, 4 March 1857, 5 March 1857.
[172] The National Archives, (TNA) B.T. 31, 16 (79).
[173] Anon, *Poisoning: wholesale, retail and for exportation*. 1869, BL Microfilm.

Following the 1855 Select Committee John Postgate, one of the most influential of the medical reformers, continued to foster agitation on the adulteration issue. He spoke in his home city of Birmingham and towns up and down the country, highlighting what he saw as a 'national disgrace'. During his travels, Postgate claimed that two-thirds of food samples taken in various towns were either impure or adulterated.[174] Another important pressure group founded at this time, through which Postgate expressed his views on adulteration, was the Social Science Association. The National Association for the Promotion of Social Science or, the Social Science Association as it came to be known, was formed in 1857 in an attempt to bring about social reform by combining the interests of doctors, lawyers, educationalists, economists and business men. Described by Royston Lambert as 'one of the most notable pressure groups of the day' the group agitated for reform and held an annual congress where social issues were discussed.[175]

The adulteration issue was discussed by the Association's Health Department whose members included the sanitarian Southwood Smith, Edwin Chadwick, John Simon and John Postgate.[176] In an attempt to stimulate regional interest in social reform, as well as discuss issues specific to various towns or cities,

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[174] John Postgate, 'The Adulteration of Food and Drugs' *Transactions of the National Association for the Promotion of Social Science,* 1857, p. 483.
[175] Royston Lambert, *Sir John Simon 1816-1904,* 1963, p. 299. B. Rodgers, 'The Social Science Association 1857-1886', *Manchester School of Economic and Social Studies,* **20**, 1952, pp. 283-310.
[176] Dr Southwood Smith (1788-1861) was an Edinburgh doctor working in London. A friend of Chadwick and closely associated with his work, Smith contributed to the 1834 Poor Law Amendment Act and in a health report on London identified a link between disease and the water supply. Smith was instrumental in the setting up of the Metropolitan Health of Towns Association in 1844. *Oxford Dictionary of National Biography,* 2004.

meetings were held in major industrial centres.[177] John Postgate addressed the first meeting of the Association held in Birmingham in 1857 and once more outlined the adulteration problem. Throughout the following two decades the adulteration issue was frequently discussed at meetings and reported in *Transactions* of the society which gave prominent space to these discussions. It was at one of these meetings in 1857 that Postgate put forward his own definition of adulteration in an effort to clarify what had become a very confused issue. According to Postgate 'adulteration' had two components; 'scientifically adulteration is the simulation of a commodity, or the fictitious alteration of it by the addition of foreign substances'. The second 'morally...is the perpetration of a crime — a deception practised on the purchaser by a substitution, and the reward of reposed confidence by a swindle'.[178] Such was its influence and importance that it has been suggested that the first Adulteration Act of 1860 owed much to pressure from the Association.[179] However, Ronald Huch argues against this. In his view the society was not necessarily an 'initiator or promoter, of specific ameliorative legislation'; the strength of the Association was its role as a 'pressure group'.[180] This would seem to be a fair assessment. After the publicity surrounding the findings of the Select Committee in 1856, the Association provided an important platform for food reformers to continue focusing on the issue of adulteration as well as an authoritative voice on the subject.

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[177] Ronald K. Huch, 'The National Association for the Promotion of Social Science: Its Contribution to Victorian Health Reform, 1857-1886', *Albion*, **17:3**, 1985, pp. 279 - 299, p. 283.
[178] Postgate, 1857, p. 483.
[179] Rodgers, 1952, p. 293.
[180] Huch, 1985, pp. 298 - 299.

Summary

By the late 1850s, and due in large part to *The Lancet* investigations, there was a more informed view of the adulteration issue than there had been earlier in the century. In contrast to the sensational accounts of adulteration published during the eighteenth century, many of which lacked any credibility, the scientific nature of *The Lancet* investigations provided a more practically useful assessment of the problem. These investigations showed that adulteration was practised extensively, raised public awareness and provided a focus for reformers to validate their claims about the seriousness of the problem. Although the 1855 Select Committee on Adulteration confirmed *The Lancet* findings, they did not consider it necessary to recommend the introduction of legislative control. This was a great blow to many reformers, but the Committee did achieve some success by bringing together, for the first time, all groups concerned with the adulteration issue. As a result, it was possible to see just how disparate many of their views were, both on the extent of adulteration and the way controls might be implemented. Such disagreements illustrated the extremely complex nature of adulteration and underlined the many difficulties reformers would face. While much had been achieved by mid-century to improve general awareness of adulteration, the important question was whether this information could be translated into effective legislation to control the problem in the following decade.

Chapter Two

The Food Acts of 1860, 1872 and 1875

The 1875 Sale of Food and Drugs Act, with which this thesis is mainly concerned, was the third Act legislated following the impetus for reform in the 1850s. Acts of 1860 and 1872 proved inadequate to control the adulteration problem. The 1875 Act, though it did not solve all the difficulties with previous adulteration legislation, would form the basis of British food law until the early-twentieth century.

It is not too surprising, given the great diversity of interests concerned with the adulteration issue, that the first food legislation which finally emerged in 1860 was a complete compromise. In attempting to please all parties, the 1860 Act succeeded in pleasing very few, and did little to address many of the fundamental issues. Similarly the second round of legislation in 1872, while remedying some anomalies in the 1860 Act, also failed to achieve many of the reformers' stated objectives. The third round of legislation, the 1875 Sale of Food and Drugs Act, did address some of the deficiencies apparent in previous legislation. Studying the deficiencies in the first two food acts, and the general provisions as well as the omissions in the 1875 Act, will provide the background for understanding the problems of implementation discussed in later chapters.

A Failed Legislative Initiative

As the hearings of the 1855 Select Committee demonstrated, each group involved in the adulteration issue had its own agenda as to how the problem might be controlled. The business community was particularly forceful in furthering its agenda of limited State interference and protecting group interests. Some petitions presented to Parliament at this time from various trade associations did support the idea of legislative control, but most trade groups expressed fears about the consequences of government interference. In 1857, grocers from around the country added their signatures to a petition opposing the idea of legislation. The main objections and fears of the business community were summed up by the grocers of Whitehaven who felt that restricting business practices in an effort to control adulteration would be 'offensively inquisitorial'.[1] These views made it highly unlikely that any immediate solution, acceptable to all parties, would be forthcoming despite the Committee's agreeing that adulteration was widespread and a danger to health.

In 1857, and undeterred by the almost predictable outcome, John Postgate the Birmingham surgeon who had been so influential in persuading William Scholefield to propose the 1855 Select Committee, encouraged Scholefield, who had also chaired it, to introduce a Bill that would attempt to control the adulteration problem. The proposed legislation would have imposed only very minimal controls on food adulteration and none at all on drug adulteration. None

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[1] Whitehaven grocers, *Reports of the Select Committee of the House of Commons on Public Petitions*, July 1857, BL, B.S. 91/6.

the less, even this rather weak proposal brought so many complaints from the trade, including a mass protest in the House of Commons lobby, that the Bill was withdrawn.[2] It is very likely that the stalemate surrounding the issue might well have continued for many years but for a high-profile poisoning disaster, directly attributable to adulteration, which occurred in Bradford in November 1858.

The 'Bradford Poisonings' 1858

The 1858 'Bradford Poisonings', as the case became known, involved the sale of peppermint lozenges adulterated with arsenic in Bradford market. Eighteen people died and over 200 were taken ill. This incident caused a public outcry and can be seen as the major catalyst that would eventually force the government to take legislative action on the adulteration issue. Although adulteration of the lozenges with arsenic was a tragic mistake, the whole problem arose because there had been a deliberate intent to adulterate, albeit with a less harmful substance. The Bradford market dealer who sold the lozenges was well known for selling his products cheaply. In order to do this he had to buy cheaply from the wholesaler. To supply cheaply, the wholesaler had to adulterate the lozenges and this he did with plaster of Paris. Unfortunately, the plaster of Paris purchased from the chemist and druggist had been supplied by a young apprentice and not the chemist himself. The apprentice had gone into the cellar where both plaster of Paris and arsenic were kept in unmarked casks and unwittingly supplied the purchaser with arsenic. Fortunately, once people became ill, the cause was

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[2] *Hansard*, CXLVI, 1857, 3rd series, p. 342. John Postgate, 2001, p. 43. P. J. Rowlinson, 1982, p. 66.

identified and the lozenges withdrawn from sale, otherwise the tragedy might have been even worse.[3]

The disaster was widely publicised in both national and local newspapers. While some papers placed the blame entirely on the public and their demand for cheap products, the main responsibility for the tragedy was seen to be the lack of adequate government controls on adulteration.[4] Certainly, *The Lancet* was in no doubt that blame for the Bradford tragedy rested with the government and members of the Select Committee for not having taken any effective legislative action on adulteration.[5] The great publicity given to the disaster once again focused attention on the issue, but this time there were far more vociferous calls for some form of legislative measure. As Ingeborg Paulus notes, the Bradford poisonings meant 'troubles' for the government.[6]

Despite widespread agreement that something should be done, bitter parliamentary debates on the best way forward continued for a further two years following the Bradford incident. While the Liberal MP William Scholefield was the main proponent of the Bill, being a private Member's Bill opponents of the Bill

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[3] 'The Awful Poisoning Case—Adulteration', *Bradford Review*, 6 November 1858, p.2, col. d.

[4] 'The Press on the Bradford Poisoning Case', *Bradford Review,* 13 November 1858, p. 4, col. c. 'Poisoned Lozenges', Letter to the Editor from George Moore, *The Times*, 10 November, 1858, p.10, col. f. In a letter to *The Times*, Arthur Hassall called for urgent government action on the problem of adulteration. He noted that the 'disgraceful' practice of adulterating lozenges had already been highlighted by *The Lancet* Commission in 1854 and the Bradford incident was not the only case where poisoning had occurred following adulteration of confectionery with arsenic. 'Adulterations', Letter to the Editor from Arthur Hassall, *The Times,* 11 November 1858, p. 7, col. f.

[5] Leading Article, *The Lancet*, **2**, 1858, p. 505.

[6] Paulus, p. 28.

THE GREAT LOZENGE-MAKER.

A Hint to Paterfamilias.

***Punch*, 20 November, 1858.**

One of the many references in *Punch* to the 'Bradford poisonings' 1858.

and those in favour were equally represented on both sides of the House.[7] On occasions it would seem that there was general support for the principle of a bill to control adulteration but certain aspects of the proposed legislation created opposition and none more so than the subject of *mens rea*.[8] This issue was the most fiercely debated and once again drew attention to the great concerns the business community had about unnecessary interference with their trading practices and concerns that innocent traders might be prosecuted. Other issues discussed for inclusion in the prospective legislation were the appointment of official public analysts as monitors of adulteration, the need for an easily understood definition of adulteration and the appointment of officials to take samples of suspect food. However, all three were contentious and there was a great deal of disagreement over technicalities such as where and how analysts might be employed, who should be responsible for collecting samples and to what extent adulteration 'injured health'.[9] In 1860, following several unsuccessful attempts, William Scholefield, Liberal MP for Birmingham, introduced the Adulteration of Food and Drink Act which received Royal Assent on 6 August 1860.[10]

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[7] Paulus, p. 54.
[8] 'Adulteration of Food or Drink Bill', *Hansard* CLVI January-March 1860, p.2026. Parliamentary Proceedings, 'Adulteration of Food and Drink Bill', *The Times*, 15 March 1860, p.6, col. e.
[9] *Hansard*, CLIV, May-June 1859, pp. 846 - 849.
[10] Adulteration of Food and Drink Act, 1860, (23 & 24 Vict. c. 84). *Hansard* CLX, July - August 1860, p. 687. Parliamentary Proceedings, 'Adulteration of Food or Drink Bill', *The Times*, 19 July 1860, p. 6, col. c.

'Intolerability' and Social Reform

In so far as it stimulated the introduction of legislation, the Bradford poisonings incident can be seen as part of the process outlined by Oliver MacDonagh in his 1958 model of Victorian social reform. In MacDonagh's theory the path to social reform follows a five-stage model in which the first stage was the exposure of a social evil; often in a sudden and catastrophic way such as the Bradford incident. According to MacDonagh, the ensuing publicity following such an incident indicates that the social evil has become 'intolerable' and this intolerability was, in MacDonagh's view, the 'master card' for effecting change. Further stages in the model see the introduction of permissive legislation followed by statutory legislation, an increase in centralisation and the growth of government inspection to enforce legislation. As a result, according to MacDonagh, 'unperceived, the ripples of government circled ever wider'. By 1860 and the introduction of the first food legislation, the adulteration issue had followed the path to legislative reform as outlined in this model.[11] It also conforms in many ways to the outline of social problems and how these are controlled, as described by Fuller and Myers in 1931 in which the authors see that social problems do not arise 'full-blown' but have a 'natural history'.[12] Even though these are early analyses they nevertheless provide a useful perspective on the adulteration issue.

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[11] Oliver MacDonagh 'The Nineteenth-Century Revolution in Government: A Reappraisal', *The Historical Journal*, **1**, (1),1958, pp. 52 - 67, p. 61

[12] R.C. Fuller & R.R. Myers, 'The Natural History of a Social Problem,' *American Sociological Review,* **6**,1931, pp. 320-329. The 'natural history' as outlined by Fuller and Myers follows a path of increasing awareness so that the social problem gradually becomes more defined. A growing, albeit ill-defined, awareness of the adulteration problem was given shape and form in mid-century by *The Lancet* enquiry. At this stage, as Fuller and Myers note, there is a feeling that something 'ought' to be done. Following awareness, the second stage involves the determination of policy. At this stage ways of coping with the problem are discussed. Invariably these discussions

While the whole of MacDonagh's theory has prompted a long-running historical debate, particular concern has been expressed over his idea that 'intolerability' is the trigger for social reform.[13] Without reopening this debate, as far as the adulteration issue is concerned it should be noted that the question of 'intolerability', and how this can be defined, is particularly relevant. As Mary Douglas has emphasised, moral values and social beliefs as to what is acceptable and what is not, are social constructs. Before particular dangers to society can be tackled, there has to be some agreement as to what the risks are. Individual societies choose and produce their own selection of perceived dangers which conform to their own way of life. Identified risks may therefore be seen more as a reflection of a particular society and not necessarily those that will cause most harm.[14] The Bradford poisonings brought to public attention the risks of adulteration and provided some agreement among reformers on the need for legislative control.

Christopher Hamlin has noted that 'all societies manufactured for themselves boundaries, represented in terms of God, money, time and nature' and these boundaries defined 'the circumstances in which social action was necessary or

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produce disagreement with conflicting interest groups anxious to ensure that solutions will be in line with their own position and interests - clearly demonstrated in the Select Committee of 1855. The final stage, as outlined by Fuller and Myers, is one of reform where debated policy is finally put into action

[13] Henry Parris, 'The Nineteenth-Century Revolution in Government: A Reappraisal Reappraised' *Historical Journal,* **3**,1960, pp. 258-283. Valerie Cromwell, 'Interpretations of Nineteenth-Century Administration: An Analysis', *Victorian Studies,* **9**,1966, pp. 245 - 255. Harold Perkin, 'Individualism Versus Collectivism in Nineteenth-Century Britain: A False Antithesis', *Journal of British Studies,* **17**, 1977, pp.105 - 118. P.W.J. Bartrip, 'State Intervention in Mid-Nineteenth Century Britain: Fact or Fiction?', *Journal of British Studies*, **23,** 1983, pp. 63 - 83. Jennifer Hart questions the whole idea of 'intolerability' being seen as the 'master card' in the initiation of social reform, Jennifer Hart, 'Nineteenth-Century Social Reform: A Tory Interpretation of History', *Past and Present*, **31**, 1965, pp. 39 - 61, p. 50.

[14] Mary Douglas, *Purity and Danger: An Analysis of the Concepts of Pollution and Taboo*, London, 2002. Mary Douglas and Aaron Wildavsky, *Risk and Culture*, 1983, p. 3.

environmental circumstances intolerable'.[15] In his 1857 work *Adulterations Detected*, Hassall did this when he identified what he considered to be the perceived 'risks' of adulteration and listed in order of priority, reasons why, for Victorian society, the practice should be controlled by legislation. His first priority was the 'protection of the public health'. Unsurprisingly this was followed by 'protection of the revenue'. The 'interests of the honest merchant and trader' preceded the interests of the 'consumer' while lastly came 'public morality' which encompassed concerns that adulteration might cause 'injury of the character of the whole nation...in the eyes of the world'.[16] On the whole these concerns confirmed the findings of the 1855 Select Committee and certain aspects, such as concerns about the danger to health of adulteration practices, would be re-enforced by the Bradford poisonings.[17] Although historians have pointed to a number of counter examples where the exposure of 'intolerable' social conditions do not follow the MacDonagh model and result in state intervention, the Bradford incident encapsulated the very essence of an 'intolerable' issue and certainly seems to have tipped the balance in stimulating legislation on food adulteration.[18]

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[15] Hamlin,1990, p. 6.
[16] Hassall, 1857, p. 38.
[17] *Select Committee on Adulteration of Food,* 1856, (379) VIII.
[18] On the temperance issue, Brian Harrison notes that there was 'no steady progress towards state intervention' and the temperance campaign was 'never enriched by detailed and expert knowledge of the problem it was tackling'. Despite recommendations that inspectors be introduced to supervise drinking places, they were never appointed and reformers ultimately relied on voluntary action. Brian Harrison, *Drink and the Victorians,* 1994, p. 30. On the arsenic question, Peter Bartrip considers that greater awareness of the problems influenced consumer choice; by women in particular, and it was this, rather than legislation, that forced manufacturers to change their practices and remove arsenic from products used in the home. Peter Bartrip, 1994.

Adulteration of Food and Drink Act, 1860[19]

Under the terms of this Act it became an offence for persons to sell 'articles of food or drink' which to their 'knowledge' contained any 'ingredient or material injurious to health', or articles that were 'adulterated or not pure'. Any person convicted of these offences was liable to a fine 'not exceeding five pounds'. Local bodies were responsible for administering the Act and for the appointment of public analysts to analyse samples of food. As an example, vestries, district boards, the Commissioners of Sewers in London and the court of quarter sessions in counties, were all permitted to appoint public analysts ensuring they had 'competent medical, chemical and microscopical knowledge'. No salary structure for analysts was laid down and local authorities were left to pay whatever they deemed appropriate.[20] Local authorities had the power to appoint analysts, although appointment was optional. There was no provision for the official collection of food samples and analysts were not given the power to do this themselves. Instead, 'any purchaser' was permitted to bring samples for analysis on payment to the analyst of a sum 'not less than two shillings and sixpence nor more than ten shillings and sixpence'.[21]

The Act failed to create one central government agency responsible for implementing the legislation, a move that had been urged by many reformers. Leaving local authorities to appoint public analysts as and when they saw fit was never going to be a viable option. Local councils often included a number of

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[19] Adulteration of Food and Drink Act, 1860, (23 & 24 Vict. c. 84).
[20] Adulteration of Food and Drink Act, 1860, s.1, s. 2.
[21] Adulteration of Food and Drink Act, 1860, s. 4.

trade members who were generally sympathetic to the small shopkeeper. In these cases it was unlikely that the council would go out of its way to appoint an analyst unless compelled to do so. As Ingeborg Paulus notes, 'the trading community network was strongly entrenched and brooked no easy interference from the central government'.[22] The Act did not define adulteration and adulteration of drugs was not included. While the adulteration of drugs would be included in later legislation, failure to define what was meant by the term 'adulteration' within the 1860 Act, reflected the level of disagreement this aspect engendered. The problem of providing a definition acceptable to all had been very apparent during the 1855 Select Committee hearings. The same issue would recur again and again during the century and will be discussed further in the following chapters. By fudging so many issues in an attempt to appease the various interest groups affected by adulteration, the drafters of the Bill succeeded in providing legislation that was such a compromise it would be largely inoperable.

Allowing 'any purchaser' to have samples analysed seemed a positive move, but the public had to be aware of the possibility and able to afford the cost of analysis. While the maximum payment was ten shillings and sixpence even the minimum fee of two shillings and sixpence was a considerable expense when, it has been calculated, annual national income in 1851 was just above twenty pounds, rising to just over twenty-three pounds in 1861, with wide variations around these figures.[23] The analytical chemist, Henry Letheby, who had been

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[22] Paulus, p. 56.
[23] Peter Mathias, *The First Industrial Nation,* 1988 p.192.

prominent in *The Lancet* investigations of the 1850s, was one of the first to take issue with this aspect of the Act. As he noted, the poor were the 'chief sufferers from adulteration', but the expense of the analyst's fee meant that 'they will be shut out most completely from the benefits of the Act'. Letheby suggested that the administrative body in charge of the issue, which in his area was the Commissioners of Sewers, give analysts discretionary power to perform analyses without charging a fee. When Letheby was appointed public analyst for the City of London in 1860, this was put into effect.[24]

While the Act made it illegal to sell adulterated goods, it had to be proved in court that the seller had done so 'knowingly'. This requirement of *mens rea* on the seller's part would prove to be one of the most contentious aspects of the Act. The Act also failed to define what was meant by 'pure' and Arthur Hassall, the microscopist who had also been prominent in *The Lancet* investigations during the early 1850s, realised that this omission, and the requirement of guilty 'knowledge', would ring alarm bells in the trade with manufacturers and retailers each blaming the other for impure goods. He urged manufacturers to take steps to make sure that all articles used, or sold, by them were pure, and where possible to print a warranty of purity on the package. Though purity is a somewhat vague concept when products often had many components, Hassall indicated what he understood by the term in a circular printed in *The Times.* According to Hassall, 'commodities' obtained by 'manufacturers' in the 'natural or raw state' were likely to be 'pure'. He warned retailers against purchasing articles

[24] Leading Article, *The Times*, 1 December 1860, p. 6, col. e.

below the cost of the constituent ingredients as this would nearly always indicate that the product was adulterated.[25] Many manufacturers and traders failed to act on Hassall's advice, hoping instead to challenge the law by disputing they had guilty knowledge, or arguing on legal technicalities. As a result, proving 'knowledge' of adulteration became one of the most exploited loopholes in the 1860 Act. Furthermore, where offences were proved, sanctions were minimal. The Act limited penalties for convicted offenders to the imposition of a fine with no provision for a custodial sentence. The penalty for those guilty of a first offence was a fine of up to five pounds. If found guilty of a subsequent offence, then the offender was to be publicly shamed by having his name, address and his offence printed in the newspapers or otherwise advertised at the offender's expense.[26]

The 1860 Act, described by a contributor to *Cornhill Magazine* as, '...weak, diluted, and itself adulterated', was an inevitable disappointment and did little to control adulteration.[27] In the years following the Act, Henry Letheby gave a number of lectures in which he emphasised these deficiencies and echoed widespread feeling that the Act was very much a 'dead letter'. Apart from the City of London, which had appointed Letheby himself as analyst, most other areas had done nothing to implement the new legislation. Even in Letheby's own area, where circulars were distributed informing the public about the workings of the Act and the poor were allowed to submit samples for analysis free of charge,

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[25] This circular was written by Hassall and issued by Joseph Travers and Sons sugar refiners of London, *The Times*, 11 September 1860, p. 5, col. b.
[26] Adulteration of Food and Drink Act, 1860, s.1.
[27] 'Adulteration and its Remedy', *Cornhill Magazine*, **2**, 1860, p. 96.

there was little interest. In the nine years after the passing of the Act, Letheby received only 57 articles for examination. He also noted that some shopkeepers were using the Act for completely the wrong reason. Genuine goods were deliberately brought to him so that a certificate of purity could be obtained for trade purposes.[28]

It was clear to reformers that the first food legislation would not solve the problem of adulteration. It failed to meet many of the anti-adulteration campaigners' suggestions and lacked the administrative machinery to make even its limited features effective. *The Chemical News,* founded in 1859 by the chemist and science journalist William Crookes, and edited by him until 1906, predicted such an outcome. The journal consistently criticised various aspects of the Act describing it as a 'miserable piece of legislation'.[29] As editor, Crookes continually put forward his own suggestions as to why the legislation was inadequate stating that it would be 'wholly ineffectual in checking adulteration'. In particular, he believed that the appointment of analysts should have been made compulsory and that they should have been given the power to take random samples.[30]

In 1861 *The Lancet*, declaring the Act to be deficient and a good example of 'how not to do a thing', summed up prevalent feeling:

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[28] Henry Letheby, 'On Food', Four Cantor Lectures delivered before the Society for the Encouragement of Arts, Manufactures and Commerce. January and February 1868.
[29] 'The Adulteration Bill in the City', *The Chemical News*, **2**, 11 September 1860, p.169.
[30] 'The Adulteration of Food Bill', *The Chemical News*, **1,** 21 April 1860, p. 229.

> ...if a number of gentlemen had formed themselves into a committee to draw up a Bill *not* to prevent adulteration, they could not have succeeded more completely...[31]

The journal criticised the voluntary nature of the Act as well as the necessity and difficulty of proving guilty knowledge on the part of the seller. It also considered that most people remained ignorant about the workings of the Act. Even in areas where people were better informed, they were unlikely to initiate complaints against their neighbours. It criticised the fee payable by the public if they wanted an analysis as being too large and regretted the lack of any concise definition of adulteration.[32]

Such views indicated that the Act was not successful and a great deal of amendment would be needed if adulteration was to be effectively controlled. However, while the Act itself did not appear to achieve a great deal, it did at least introduce the concept of sample analysis for suspect foods and suggested that specified local bodies employ public analysts for this purpose. It also brought the subject of adulteration to the fore and prompted extensive discussion and debate.

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[31] Leading Article, *The Lancet*, **1**, 1862, p. 323.
[32] 'The Adulteration of Food', p. 3, 'The Act for the Prevention of the Adulteration of Food', p. 72, Leading Article, p. 469, *The Lancet*, **1**, 1861.

The Lancet's Second Commission

To emphasise that the Act was not working, *The Lancet* announced the setting up of another Analytical Sanitary Commission in 1861.[33] Between this date and 1867 the Commission published reports in *The Lancet* which indicated that adulteration was still widespread.[34] That consumers themselves were still often blamed for adulteration by demanding cheap goods *The Lancet* felt was a 'worthless' argument. The journal repeatedly stressed that if traders were compelled to label mixtures in a way that accurately reflected their contents, no amount of cheapness would tempt consumers to buy 'best butter mixed with starch...tea with iron filings...sugar with chromate of lead'.[35] Tellingly, the journal also warned that adulteration was not confined to cheap goods; consumers who assumed they were safe because they paid more for certain articles needed to think again. Price was not a guarantee of purity, in fact the higher the price the greater the profit for those adulterating.[36] While the type of goods sampled and the format of the reports appeared in the same way as those of the first Commission, *The Lancet* reports from the second Commission were far less numerous and provoked little editorial comment, a possible indication that the subject of adulteration was becoming less contentious. The BMJ also reported on the second Commission but was somewhat scathing about the purpose of

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[33] Leading Article, *The Lancet*, **1**, 22 June 1861, p. 617.
[34] 'The Analytical Sanitary Commission', *The Lancet*, **1**, 1862, p.183. 'The Analytical Sanitary Commission', *The Lancet,* **1,** 1865, p.133.
[35] 'The Adulteration of Food', *The Lancet* , **2**, 1870, p. 481.
[36] 'The Adulteration Bill', *The Lancet*, **2**, 1871, p. 895.

another investigation noting that the influence of the first Commission on 'arresting the course of adulterations appears hitherto to be *nil*...'.[37]

Anti-Adulteration Pressure Groups

During the 1860s various organisations expressed their discontent with the Act and lobbied for further reform. The Social Science Association continued its activities as an important pressure group providing a platform where reformers could expose the inadequacies of the Act. Addressing the Association in 1866, the Public Analyst for Birmingham, Alfred Hill, who was also Lecturer on Chemistry in the city, re-emphasised one of the main problems — proving that sellers had guilty knowledge of the adulteration. In his view the permissive nature of the legislation really meant that something that was 'everybody's business' had become 'nobody's business'.[38]

Another organisation that did much to draw attention to the inadequacies of the 1860 Act and agitate for reform was the Anti-Adulteration Association. Founded in 1871, this organisation attracted lawyers, clergymen and MPs. Within a short time the Association claimed to have four thousand members from the 'most influential classes'. Of some note was the fact that membership included trading companies such as Heal & Sons, Swan & Edgar, Mappin Bros., M. Twining and the Aerated Bread Company. This middle-class membership was very similar to the Social Science Association, in fact some were members of both

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[37] 'The Week', *British Medical Journal*, **2,** 16 November 1861, p.536.
[38] Alfred Hill, 'Adulteration of Food' *Transactions of the National Association for the Promotion of Social Science*, 1866, p. 450.

organisations. While it is difficult to estimate the influence of the Anti-Adulteration Association, it is interesting to note that it attracted such a diverse membership all of whom were obviously concerned about the adulteration issue. The stated aims of the Association were to see the introduction of tighter controls on adulteration and to elicit public support by means of petitions. It also hoped to show the extent of adulteration by analysing food samples. For this purpose it obtained the services of a 'well known chemist' as well as the use of laboratory premises to which the public were invited to bring samples.[39]

From its inception the Anti-Adulteration Association used its publication, *The Anti-Adulteration Review*, to put forward its aims and discuss the adulteration issue.[40] Issued monthly, the *Review* provided information on adulteration and included articles on the subject from other journals, as well as advertisements for certain products that were claimed to be 'pure' and free from adulteration.[41] The journal provided instructions for the public to detect adulterations for themselves, although the somewhat simplistic nature of these 'tests' cast doubts on their effectiveness. As an example, if the adulteration of coffee was suspected the public were to take the coffee home and having placed it in the hand and given it 'a good squeeze' they were to 'lay it gently on the table and open it'. If the

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[39] *The Anti-Adulteration Review*, **1**, November 1871, pp.3-15, 'The Laboratory of the Anti-Adulteration Association', p.7. Unfortunately, there seems to be no record of who this 'well known chemist' was.

[40] In February 1880 the organisation changed its name to The Anti-Adulteration and Household Cistern Cleaning Company, however, *The Anti- Adulteration Review* continued to be the medium through which the society promoted its views until 1882 when the title of the *Review* changed to *The Anti-Adulteration Review and Food Journal.* The Company was dissolved on 15 January 1884. TNA, BT 31/1594/5311.

[41] Arthur Hassall often featured in these adverts. In the October 1874 issue of the *Review* he endorses 'Iceland Moss Cocoa', while in 1876 the journal carried an advert for 'Dr Hassall's Food for Infants, Children and Invalids'. *The Anti-Adulteration Review,* **33** October 1874, p.2. *The Anti-Adulteration Review* March 1876, p.1.

sample was be found to be 'adhering together in a cake' then it was deemed not to be 'pure'.[42] The journal also reported on prosecutions for adulteration offences. At the same time, it listed tradesmen, such as tea and coffee merchants as well as milk sellers, who sold good quality products and restaurants and hotels where food could be 'guaranteed'. Quite how this was achieved is not clear. What is clear however, is that the Anti-Adulteration Association, through the medium of the *Review,* did much to raise awareness of the inadequacies of the 1860 Adulteration Act and put forward what it saw as more workable suggestions in the interests of consumers.[43]

Another journal published at this time which aimed to discuss not only food quality but also aspects of air and water pollution, was *Food, Water, and Air.* This journal, which appeared monthly, was first published in November 1871 and edited by Arthur Hassall. In the first edition, Hassall noted that there were few subjects that had attracted a 'greater amount of misconception, error and falsehood than that of adulteration'. He hoped the journal would provide a means of 'refuting' these errors.[44] While groups such as the Anti-Adulteration Association and journals that highlighted the adulteration issue certainly increased awareness, there is little evidence to suggest that they actively influenced the reform process. *Food, Water, and Air* ceased publication in 1874 and by this time the journal devoted less space to the adulteration issue. Although *The Anti-Adulteration Review* (from 1882 *The Anti-Adulteration Review and Food Journal*) continued to be published until 1886, some two years after

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[42] 'How to Detect Adulterated Coffee', *The Anti-Adulteration Review,* **1**, November 1871, p.11.
[43] Editorial, *The Anti-Adulteration Review,* **1**, November 1871, p. 8.
[44] Arthur Hassall, (ed) *Food, Water, and Air,* **1**, 1871, pp.1 - 3.

the company was wound up, by this time it too devoted less space to adulteration matters.

Trade Publications

The aims of the adulteration reformers were increasingly well represented by dedicated organisations and their journals. At the same time the number of trade publications putting forward the views of the grocery trade on the adulteration issue also increased. Periodicals such as *The Grocer* and *The Grocer's Journal* are best known, but Christopher Hosgood notes that 'literally hundreds' of others competed for the attention of the specialist trader. These journals gave shopkeepers practical information, such as price lists and trade news, and also provided them 'with a sense of trade identity'. They 'stimulated traders to take action to defend this identity, thereby promoting peace and solidarity in trade ranks'.[45]

Trade journals were therefore an important medium through which the independent trader was made part of the wider trading community and they did much to foster the idea that strength lay in 'collective action'.[46] Most importantly, it was the retail trade press that grocers increasingly used in order to defend themselves against charges of adulteration. For the trade, adulteration and the 1860 legislation were important issues — a fact confirmed by the very first issue of *The Grocer* published in 1862. This carried a strongly worded editorial on the

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[45] Christopher Hosgood, 'The Shopkeeper's "Friend": the Retail Trade Press in late-Victorian and Edwardian Britain', *Victorian Periodicals Review*, **25**, 1992, pp.164-172, p.165.
[46] Hosgood, 'The Shopkeeper's "Friend" ',1992, pp.166 - 169.

subject, defending what it saw as its 'much abused' members. The journal announced that it would vigorously defend the interests of its readers at a time when, '...amateur and dilettante chemical detectives are going about seeking how many adulterating grocers they may devour'. *The Grocer* also aimed to enlighten the general public who, it felt, had been 'frightened out of their wits' by misinformation on the adulteration issue. These forceful attacks were tempered with the acknowledgement that the grocery trade did indeed contain 'black sheep' and it was made clear that it was not the journal's intention to defend these persons.[47]

Throughout the 1860s, *The Grocer* continued to defend its members against charges of adulteration. It is clear from this journal that the business community, while opposed to unnecessary interference with the principles of free trade, did accept that increased legislative control of adulteration was needed. It is also clear that many of the criticisms of the 1860 Act raised by *The Grocer* were valid, especially the lack of any definition of adulteration. Without this measure, many apparently ludicrous judgements resulted and the journal was quick to publish details of them.[48] The journal questioned the competence of some analysts involved in the testing of food samples, especially chemists of the Excise

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[47] 'Our Mission', *The Grocer,* **1,** 4 January 1862, p. 8.

[48] An early issue of the journal questioned whether 'rubbing apples to make them shine' constituted 'adulteration' and goes on to mention the absurdity of a case where Excise men had 'smelt' tobacco supposedly adulterated with liquorice. The case was thrown out by the magistrates. 'Facts and Regulations Respecting Alleged Adulterations', *The Grocer,* **1,** 1 March 1862, p.146.

Department, whose involvement in the adulteration issue will be discussed in more detail in later chapters.[49]

The journal also emphasised that grocers were often blamed, unjustly, for faulty products supplied by wholesalers and manufacturers.[50] These complaints once more illustrated the problem of establishing exactly where the adulteration had taken place. While small shopkeepers complained they were being held responsible for adulteration committed by manufacturers and wholesalers, there were also complaints from the trade itself that items, such as tea, were already adulterated when imported. The Inland Revenue Annual Report of 1862 indicates that adulteration of tea abroad made it exceedingly difficult to estimate how much adulteration might have taken place after tea had been imported. The Inland Revenue had no power to refuse to release tea for home consumption once the duty was paid, no matter how adulterated it might be. It was well known that imported tea might contain stalks, twigs and used leaves, as well as fine sand, poisonous colourings and iron filings.[51] In one case reported by *The Times* in 1873, a consignment of imported 'tea' 'was so charged with metallic ingredients as to obey the attraction of a magnet'.[52] As *The Anti-Adulteration Review* noted in 1871, 'the poor man's teapot is often little more than a dustbin for all sorts of spurious rubbish'.[53]

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[49] Leading Article 'Adulteration and the Inland Revenue Returns' *The Grocer*, **3**, 7 October 1865, p. 248.
[50] 'Adulteration of Food', *The Grocer*, **8**, 30 December 1865, p. 463.
[51] *Sixth Report of the Commissioners of Her Majesty's Inland Revenue*, 1862, (3047) XXVII, p.19.
[52] Leading Article, *The Times*, 25 October 1873, p. 9, col. d.
[53] This journal not only drew attention to the problem of adulterated tea but also to the poor quality of tea being offered for sale on the London Market. It noted that in 1866, 350,000lbs of tea was offered for sale in London, despite the fact that it had come from a building which had caught

Agitation for Reform of the 1860 Act

As the 1860s progressed, general discontent about existing adulteration legislation amongst the trade, medical profession and the few public analysts who had been appointed, indicated that a more effective law was needed. Between 1868 and 1872, a number of amendments to the 1860 Act were proposed. Parliamentary discussions on these amendments centred around the need to extend the provisions of the Act to incorporate the adulteration of drugs and whether the appointment of public analysts should remain permissive, or local authorities be compelled to appoint them. It would seem that a number of pro-reform MPs, including Lord Eustace Cecil, Conservative MP for Essex (West), wanted to make the appointment of analysts compulsory and only co-operated with Phillip Muntz, the Birmingham MP and main proponent of the amended Bill, on the understanding that this took place. As a result, the word 'may', was changed to 'shall'. Had this Bill been passed, local authorities would have been obliged to appoint analysts immediately. However, it would seem that Cecil was approached by a fellow MP and advised to change this clause if he wanted the support of other Members. The wording was changed once more and in the proposed legislation the appointment of analysts remained permissive unless local authorities were specifically required to make an appointment by the newly established Local Government Board (LGB).[54] The LGB was a new body set up following the 1871 Report of the Royal Sanitary Commission. This Commission set up in 1869, the same time that revision of the 1860 Act was

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fire and was so charred and soaked with water it rendered the tea 'as to be quite unfit for consumption'. 'Tea', *The Anti-Adulteration Review* , **2**, 15 December 1871, p. 20.

[54]'Recent Sanitary Legislation', *The Anti-Adulteration Review*, **13,** 15 November 1872, p. 3.

under discussion, drew attention to the fragmented nature of sanitary policy implemented by local bodies who, in many cases, discharged their duties in a dilatory manner. It recommended the unification of sanitary policy under a central administration and the introduction of compulsory regulation.[55]

Adulteration of Food, Drink and Drugs Act, 1872 [56]

After lengthy discussions and repeated submissions the amended adulteration Act finally became law in 1872.[57] The LGB thus became responsible for overseeing the implementation of all adulteration legislation, such as approving the appointment of public analysts and informing local authorities of their duties under the Act. One of the most valuable additions in this legislation was the provision to collect samples of food, drink and drugs for submission to public analysts for analysis. The Act nominated three local officials as possible collectors of samples — the inspector of nuisances, the inspector of weights and measures, and the inspector of markets — and allowed individual councils to decide which officials should do so in their jurisdiction. The Act was extended to cover the adulteration of drugs, while the power to appoint analysts now included all boroughs having separate police establishments. This meant that more local authorities were permitted to appoint public analysts. However, such appointments remained permissive unless local authorities were required to do

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[55] Brand, pp.12 - 13.
[56] Adulteration of Food, Drink and Drugs Act, 1872, (35 & 36 Vict. c. 74).
[57] *Journal of the House of* Commons, cxxii, 1867-1868. *Hansard*, cxcii, May-June 1868, p.1351. *Journal of the House of Commons*, cxxiv, 1868-1869. *Hansard,* cxciv, February-March 1869. *Hansard,* cxvii, July-August 1869. *Hansard*, cxciv, February-March 1870. *Journal of the House of Commons,* cxxv, 1870. *Hansard,* ccvii, July-August, 1871. *Hansard*, ccix, February-March 1872.

so by the LGB. It was also necessary for the Board to approve any such appointments. As with the previous Act, it was an offence to sell adulterated goods if there was 'knowledge' of the adulteration and the adulterants were deemed to be 'injurious to health'.[58] It was now an offence to 'wilfully' mix articles with 'injurious or poisonous' ingredients if they were for sale. Additionally, the Act made it an offence to sell an article mixed with ingredients intended 'fraudulently to increase its weight or bulk...'unless this fact was declared to the purchaser at the time of sale.[59] Analysts were required to keep some record of their work submitting quarterly reports to the local authority which appointed them. These reports were to indicate the number of articles of food, drink or drugs analysed and adulterations found. The maximum penalty for those found guilty of adulteration was increased from five to fifty pounds. Second or subsequent offences might incur a custodial sentence of up to six months.

Anomalies and Omissions in the 1872 Act

While some aspects of the amended Act were thus an obvious improvement, in general it remained a disappointment to food reformers. The failure to make the appointment of analysts mandatory was of most concern. Although the Act appeared to give the LGB power to ensure local authorities appointed analysts, the limited powers of this body, as well as the dilatory attitude of many local authorities towards the employment of analysts even when required to do so by

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[58] Adulteration of Food, Drink and Drugs Act, 1872. 'Every person who shall sell any article of food or drink with which to the knowledge of such person any ingredient or material injurious to the health of persons eating or drinking such article has been mixed...'. s. 2.
[59] Adulteration of Food, Drink and Drugs Act, 1872, s. 3.

the Board, often prevented this from taking place. As John Burnett notes, this section of the Act was an 'ill-defined amendment' which appeared to imply some 'element of central control' but in practice did not work this way.[60] *The Anti-Adulteration Review* considered the Act to be full of 'loopholes' that any 'clever lawyer' could get around.[61] This was especially true when it came to the term 'injurious to health'. The Act did not define what was meant by this and proving that adulterants might be 'injurious to health' was often so problematic that many of those prosecuted for adulteration offences were acquitted on this technicality.

The Grocer deemed the 1872 Act a 'kind of legal obscurity' and considered it would only bring further problems for the trade.[62] Of special concern was the fact that the new Act now made it illegal to sell 'mixtures' unless this fact was clearly acknowledged and declared at the time of sale. To conform to this requirement, many manufacturers applied labels voluntarily but this did not absolve sellers from also declaring that goods were 'mixtures' at the time of sale.[63] While the 1872 Act required sellers to notify purchasers if an article had been mixed, a definitive way of doing so was not prescribed. As a result, this requirement caused a great deal of confusion in the trade and resulted in many retailers being prosecuted for supplying what they thought to be 'pure' items. The cocoa manufacturer Joseph Fry explained his problems. It was standard practice to mix his pure cocoa with sugar and arrowroot to make it more palatable. This product was labelled accordingly and in Fry's opinion was a 'legitimate' mixture. Despite

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[60] Burnett, 1989, p. 229.
[61] 'The Working of the New Act', *The Anti-Adulteration Review*, **12**, 15 October 1872, p. 8.
[62] 'The Adulteration of Food etc Act', *The Grocer*, **23**, 31 August 1872, p. 186.
[63] Adulteration of Food, Drink and Drugs Act, 1872, s. 3.

having a written label, some grocers were being prosecuted under the Act for not declaring at the time of sale that the cocoa was a mixture.[64] The use of labels was not compulsory and, even where used, mistakes could happen. In one incident reported by Fry, an old woman shopkeeper had been fined five shillings for selling, as pure, a packet of cocoa that was mixed, and from which the label had accidentally been removed.[65]

The mustard manufacturer Jeremiah Colman faced the same problem. In his view 'mixed' mustard — mustard seeds with the addition of flour and turmeric — was far superior and more palatable than the 'pure' product. His firm had tried to conform to the law and had sent out 'millions' of labels to shopkeepers indicating that the firm's mustard was a mixture. But this section in the Act continued to cause a great deal of confusion. Magistrates often rejected the wording on labels as inadequate, or they felt that a verbal declaration that the article was a mixture should have been made to each customer at the time of sale. According to Colman, his firm had received 'hundreds' of letters from traders complaining of 'prosecutions and annoyances in selling mustard' and deficiencies in the Act.[66] Another point raised by Colman, relevant to any manufacturer concerned with sales, was that the use of labels explaining that the contents were a mixture, was often 'detrimental' to sales. As Colman noted, 'it excites people's curiosity and

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[64] Section 3 of the Act required the vendor to make a declaration at the time of sale that the purchase was a mixture. Adulteration of Food, Drink and Drugs Act, 1872, s. 3.
[65] Evidence of Joseph Fry, *Select Committee on Adulteration of Food Act (1872)* 1874. (262) VI, Qs.1348-1364.
[66] Evidence of Jeremiah Colman, *Select Committee on Adulteration of Food Act (1872)*, 1874, (262) VI, Qs.1103-1266.

anxiety, and they fancy that the mustard is not so good as really it is'.[67] In an effort to comply with the law some mustard manufacturers started labelling their products as, 'warranted free from injurious admixture, but not sold as pure mustard'. As *The Grocer* noted, this sort of labelling was ridiculous; it was badly worded and could only lead to a great deal of confusion.[68] The journal advocated that grocery retailers protect themselves from this particular 'tyranny' by forming themselves into trade societies in each town. In many areas this was carried out.[69]

Another major failing was that once again the legislation did not define what was meant by the term 'adulteration'. Eventually, the Society of Public Analysts (SPA), founded in 1874, tried to remedy this situation and in 1876 put forward their own suggestion. This will be discussed in more detail in chapter five. The SPA basically considered articles to be adulterated if they contained ingredients 'injurious to health', additional substances to increase 'weight, bulk or strength', if 'important constituents' had been 'abstracted', or if one article was sold in 'imitation of another'.[70] There was also continuing concern, particularly in the grocery trade, that *mens rea* remained part of the Act. There was a great deal of confusion on this issue especially when cases came to court. As Paulus notes, the result was that 'local authorities spent enforcement monies ineffectually, and inspectors were constantly frustrated...by not achieving any permanent

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[67] Evidence of Jeremiah Colman, *Select Committee on Adulteration of Food Act (1872)*,1874, (262) VI, Q.1115.
[68] Letter to the Editor, 'The Sale of Mustard', from 'B', *The Grocer*, **22**, 7 September 1872, p. 203.
[69] 'The Adulteration Question' *The Grocer*, **22**, 24 August 1872, p. 163, 'The Adulteration of Food etc Act', *The Grocer*, **22**, 31 August 1872, p.186.
[70] *Proceedings of the Society of Public Analysts*, **1**, 1876.

convictions'.[71] With increasing discontent among the trade and dissatisfaction on the part of anti-adulteration reformers, a Select Committee to investigate the workings of the 1872 Act was formed in 1874.

Select Committee on Adulteration of Food Act (1872) 1874 [72]

Although many reformers welcomed the Select Committee and the opportunity to discuss important issues, there was some suspicion that it had been set up entirely as a result of pressure from within the business community. This suspicion was voiced publicly by *The Lancet* which felt that there was a 'radical defect in the constitution' of the Committee which had not been convened in the interests of the public, but appointed at the 'insistence of manufacturers and traders'.[73] An examination of the background and occupation of members of the Committee, as well as those of the witnesses, indicates *The Lancet* may have had some justification in this assertion. Chairing the Committee was Clare Sewell Read, Parliamentary Secretary to the LGB. Read was Conservative MP for Norfolk South, a Norfolk farmer and President of the Norfolk Chamber of Agriculture; he was in favour of 'progressive Conservatism, and fair play for British agriculture'.[74] Other members included Jeremiah Colman, the Norfolk mustard manufacturer, who also appeared as a witness, and the biscuit manufacturer Henry Peek. Among the fifty-seven witnesses, tea dealers were particularly well represented and there were also a number of influential food

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[71] Paulus, p. 32.
[72] *Select Committee on Adulteration of Food Act (1872),* 1874, (262) VI.
[73] Leading Article, *The Lancet*, **2**, 1874, p.18.
[74] *Who's Who of British Members of Parliament 1832-1885*, **1,** 1976.

manufacturers including Joseph Fry and George Cadbury together with Anthony Mundella, a Nottingham manufacturer, who was to become President of the Board of Trade in 1886. A number of smaller traders, such as milk sellers, druggists and bakers also gave evidence together with analysts and other government officials.

It quickly became clear during the Committee hearings that a major problem with the 1872 Adulteration Act, as had been the case with its predecessor, was the haphazard and, in many cases, dilatory way the legislation had been applied, in particular the failure by local authorities to appoint analysts. Following the introduction of the 1860 Act only six analysts had been appointed throughout England and most had failed to analyse samples under the Act. As the Select Committee heard, this situation had improved somewhat after the passing of the 1872 Act. By 1874, in England, 26 boroughs out of 171 had appointed public analysts. Analysts had also been appointed in 34 counties out of 59 'counties or divisions of counties'. These appointments were those already approved by the Board; in addition there were 'one or two cases under consideration'.[75] However, even in areas where an analyst had been appointed, local authorities had often failed to appoint inspectors to collect samples and the Act was deemed a 'dead letter'.[76] Although the 1872 Act gave the LGB power to order the appointment of

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[75] Evidence of Hugh Owen, Officer of the Local Government Board, *Select Committee on Adulteration of Food Act (1872),* 1874, (262) VI, Qs. 54 - 57.
[76] *Select Committee on Adulteration of Food Act (1872),* 1874, (262) VI, p. iii.

analysts, the 1874 Select Committee heard that in no case had these 'coercive' powers been used.[77]

Giving evidence to the Committee, Alfred Allen, public analyst for Sheffield, considered that local authorities should be compelled to appoint analysts. Replying to trade allegations of incompetency on the part of some analysts, he conceded that although this was true in certain cases, these allegations often arose after a trader had requested a second analysis. Often this analysis was made by a man 'who has really given less attention to that particular subject' and therefore finds the sample to be 'genuine'. As Allen noted, many of these analysts were 'medical men' who learnt about analysis by 'going into the laboratories of competent chemists because they knew nothing about it'.[78] In his opinion the 'medical knowledge' required by the Act was a 'fertile source of difficulties' as there 'was nothing in the training of a medical man to make him a chemist, or to make him have knowledge of chemistry'.[79] This subject, which will be discussed more fully in later chapters, was a very contentious issue for most of the century. Analytical chemists appointed to public analyst posts were bitterly opposed to the practice of appointing medical men as public analysts. Most considered that these men were not competent in chemical analysis and that mistakes made by them reflected badly on the whole analytical profession.

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[77] Evidence of Hugh Owen, *Select Committee on Adulteration of Food Act (1872)*,1874, (262) VI, Q.118.

[78] Giving evidence to the Committee, George Barham a milk dealer supported this view stating that he had little faith in the judgement of analysts 'but the majority of them are medical officers of health who have had little education in chemistry...'. Evidence of George Barham, *Select Committee on Adulteration of Food Act (1872)*,1874, (262) VI, Q. 2448.

[79] Evidence of Alfred H. Allen, public analyst for the City of Sheffield, *Select Committee on Adulteration of Food Act (1872)*, 1874, (262) VI, Qs. 3547 - 3548.

Many protracted deliberations took place at local level about the necessity, or otherwise, of appointing a public analyst and this would remain a feature of the implementation of adulteration legislation later in the century. For example, a report written in 1863 by Robert Angus Smith, a member of the Sub-Committee upon the 'Adulteration of Food' of the Manchester and Salford Sanitary Association, indicated that this committee, consisting of both councillors and doctors, thought it necessary to investigate adulteration in Manchester before deciding whether or not to appoint an analyst.[80] To estimate the extent of the adulteration problem, they appointed five chemists to analyse specimens of food bought by an officer of the Association. Their report notes that purchases were made 'only from inferior shops' and that none of the names of dealers was known to the chemists. Unfortunately there is no mention of how many samples were analysed. However, from their investigations, the committee concluded that, in Manchester at least, the adulteration of food with 'pernicious substances' was very rare. The report also noted that there had been many 'exaggerated statements' on the subject of adulteration. It was therefore decided that no analyst be appointed for Manchester at this time, although it was recognised that such an official would be of use in large towns as an authority on the subject of adulteration.[81] While the appointment of an analyst was not considered necessary, some credit must be given to the Sub-Committee in Manchester for

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[80] Robert Angus Smith (1817-1884) would seem to have been well qualified to make this assessment. Born in Glasgow, Smith studied chemistry in Germany under Liebig. Influenced by the ideas of Edwin Chadwick he was active in the Manchester scientific community conducting enquiries under the Health of Towns Commission and investigations into pollution and health. Following the Alkali Act of 1863 he was appointed first Chief Inspector in 1864. Christine Garwood, 'Green Crusaders or Captives of Industry? The British Alkali Inspectorate and the Ethics of Environmental Decision Making, 1864-95', *Annals of Science*, **61**, 2004, pp. 99 - 117.

[81] Manchester and Salford Sanitary Association, Report of the Sub-Committee upon the Adulteration of Food, 1863.

at least attempting to investigate the prevalence of adulteration as this was certainly not done by other authorities where deliberations on the appointment of analysts took place.

In 1875 a report in the *Journal of the Society of Arts* by Wentworth Lascelles Scott, analyst for Derby and North Stafford, discussed the finding of the Select Committee that few analysts had been appointed after the introduction of the 1860 Act. In his view, this was because of 'trade opposition in and out of parliament' as well as the purely optional nature of the legislation. He also confirmed there were wide discrepancies in sample collection and analysis. As an example, in the twelve months after the 1872 Act had been put into operation, the analyst for Cambridge examined only one sample in six months and the analyst for Colchester, only one sample in twelve months. In Oxford, where an analyst had been appointed for two years, only twenty-four samples were analysed, but in Surrey, where an analyst had also been in post for two years,1,513 samples had been examined and 140 convictions obtained.[82] The wide variation in sample collection and analysis, as noted by Scott, was to be a continuing feature of the adulteration issue. That such large discrepancies occurred depended on many factors, not least on the attitude of local authorities to the adulteration issue, and these factors will be discussed in the following chapters.

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[82] Scott, 1875, pp. 429, 436 - 437.

The Select Committee was also made aware of trade concerns over the question of 'mixtures' and the use of colourings. Representatives of the tea trade were adamant that colouring added to tea was not harmful, despite evidence from *The Lancet* enquiry that colourings added to food and drink often contained harmful poisons. Giving evidence to the Committee, William Thompson, head of one of the largest tea brokers in the City of London, stated that he had been tasting tea for thirty-five years and had not suffered any ill effects.[83] His views were typical of the tea trade; most denied that adulteration with harmful ingredients occurred to any great extent after tea had been imported. An exception was the tea dealer Whitworth Jackson, who thought that adulteration of tea after it had been imported remained a problem and told the Committee that there was a place within a 'bow-shot' of the House where this was taking place.[84] Of most concern to those in the tea trade was the adulteration of tea *before* importation. Tea dealers continually emphasised to the Committee that they wished to see this aspect of adulteration prevented by new legislation allowing government inspection at the time of importation.

It is clear from evidence given to the Select Committee that manufacturers such as Jeremiah Colman, George Cadbury and Joseph Fry considered their firms to have complied with the law in every way. All stoutly defended the integrity of their products. They considered that where problems had arisen, it was the law that was at fault for failing to provide any definition of adulteration and for creating

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[83] Evidence of William Thompson, *Select Committee on Adulteration of Food Act (1872)*,1874, (262) VI, Q. 5599.
[84] Evidence of Whitworth Jackson, *Select Committee on Adulteration of Food Act (1872)*, 1874, (262) VI, Qs. 3093, 3333.

confusion over 'mixtures'. Asked how this situation could be rectified, Colman no doubt echoed the feelings of his fellow manufacturers by stating that he wished his manufacturing processes to be 'left entirely alone' by legislation.[85]

Given the strength of trade representation both in the composition of the 1874 Select Committee and among the witnesses, it is not surprising that the Final Report published in July 1874, clearly favoured this group. While the Report conceded that the 1872 Act had 'done much good', it also declared that many 'respectable tradesmen' had suffered 'considerable injury' and the Act was 'defective, and needs amendment'. In the Committee's view this was due to a clear lack of understanding 'as to what *does* and what *does not* constitute adulteration' and to 'conflicting decisions and inexperience of analysts'. Summarising the investigations, the Committee noted 'it will afford some consolation to the public to know that in the matter of adulteration they are *cheated* rather than *poisoned*'.[86]

The Lancet quickly took issue with this somewhat bizarre statement and dubbed the Report 'faulty, erroneous and mischievous'. The journal also disputed that analysts were responsible for the failure of the Act.[87] *The Chemical News* agreed, arguing that it was ridiculous to blame public analysts, particularly when the Committee itself had suggested that what many viewed as the even less competent Excise Chemists from Somerset House be used in cases of disputed

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[85] Evidence of Jeremiah Colman *Select Committee on Adulteration of Food Act (1872)*, 1874, (262) VI, Q.1183.
[86] *Report of the Select Committee on Adulteration of Food Act (1872)*, 1874, (262) VI, p.iii.
[87] Leading Article, *The Lancet*, **2**, 1874, pp. 132-134.

analysis; a proposal seen by the journal as 'a joke'.[88] Trade anxieties on the issue of analysts' competence were made clear in July 1874, the same month that the Select Committee issued its Report, when a large trade deputation was made to the President of the LGB. The deputation included many Members of Parliament, representatives from the Wholesale and Retail Tea Dealers' Association, the National Chamber of Trade and various provincial associations. It also included Henry Peek and Jeremiah Colman, both members of the 1874 Select Committee. The main aims of the deputation appear to have been to persuade the LGB to exercise its powers to influence local bodies to appoint analysts, and to ensure they were competent. Concern was expressed that many wrongful prosecutions were being made because of their reluctance to do this. As a result, a great deal of hardship was being experienced by the trade simply because of the activities of 'incompetent' analysts. Henry Peek appealed to the President to 'mitigate' these hardships.[89]

This trade delegation, together with the findings of the 1874 Select Committee, was widely reported in the press. It is clear from these reports that on the issue of adulteration, press sympathies at this time lay with the trading community. *The Times* supported the findings of the Select Committee and agreed that, while the 1872 Act had done a 'certain amount of good' it had also done a 'certain amount of harm', so that the law needed amendment to protect the interests of the

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[88] 'The Parliamentary Committee on the Adulteration of Food Act', *The Chemical News*, **30**, 17 July 1874, p.23. 'The Committee on Adulteration', *The Chemical News,* **30**, 10 July 1874, p.11.
[89] 'The Government and the Adulteration Act', *The Times,* 16 July 1874, p. 11, col. f. 'Adulteration of Food', *The Times*, 24 July 1874, p. 6, col. b.

trading community.[90] Such publicity served to stress the fact that, by 1874, despite two legislative enactments and two Select Committees, the problem of adulteration was no nearer a solution. In many ways, the situation was more confused than it had been in the late 1850s. Trade discontent was certainly greater and hardships experienced by them because of inadequacies within the legislation allowed them to mobilise even greater support for their cause. Clearly, new legislation was required that would address trade grievances and put in place improved machinery for controlling adulteration. Following a great deal of Parliamentary discussion and argument, particularly over the issue of *mens rea* and the proposal to set up a 'court of reference' staffed by the Excise chemists, the Sale of Food and Drugs Act was finally passed in 1875.

Sale of Food and Drugs Act, 1875 [91]

One of the most important new provisions in the 1875 Act was the appointment of the Excise Chemists to be arbitrators in cases of disputed evidence. This new provision, known as the 'court of reference', was designed to appease the business community. As will be discussed in the following chapters this was a very contentious issue among public analysts who considered that the Excise Chemists lacked the professional expertise to act in this 'reference' capacity. The 1875 Act also increased the range of officials permitted to collect samples. In addition to inspectors of nuisances, inspectors of weights and measures and inspectors of markets, two new categories were included; Medical Officers of

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[90] Leading Article, *The Times,* 22 August 1874, p. 7, col. d.
[91] Sale of Food and Drugs Act, 1875, (38 & 39 Vict. c. 63).

Health and police constables. The role and duties of these officials in implementing the Act will be discussed in the following chapter.

Prior to 1875 there had been a great deal of unease in the trade about the way samples of food had been collected and concern that some traders were being unfairly convicted because of this. The 1875 legislation aimed to ensure the trader was treated fairly, while at the same time giving greater protection to the analyst against charges of corruption. In future, the inspector, having notified the vendor of his intention to have the sample analysed, would be required to 'offer to divide' the sample into three portions, each portion marked and sealed. One sample was to be returned to the seller, one was to be retained by the inspector for possible future analysis and comparison and one sample was to be sent to the analyst.[92]

Another problem addressed by the 1875 Act concerned the transmission of samples to the analyst, who often worked some distance away from the district they served. The Act allowed samples to be sent through the post if the analyst lived more than two miles away and, in 1875, the LGB sent a circular to all local authorities giving specific instructions from the Postmaster-General on the way these samples should be transmitted.[93]

Continual lobbying from tea traders and importers had finally achieved the result they wanted. Under the 1875 Act, all imported tea was to be examined for quality

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[92] Sale of Food and Drugs Act, 1875, s. 14.
[93] *Fifth Annual Report of the Local Government Board,* 1875-76, (C.1585) XXXI, Appendix A, p. 91.

by Customs and samples taken for analysis when they considered this necessary. If the tea was deemed 'unfit for human food' then it was to be destroyed.[94]

In common with previous acts, the 1875 legislation did not provide a definition of 'adulteration' and even the word itself had disappeared from the title of the Act.[95] No doubt this omission reflected difficulties experienced by drafters of the Bill who had found it impossible to agree a suitable definition and had therefore omitted the word completely from the title.[96] Although the Act did not define adulteration it did provide some definitions for the terms 'food and drugs', although these were not particularly informative. The term 'food' included 'every article used for food or drink by man, other than drugs or water'. The term 'drug' included 'medicine for internal or external use'.[97] There was also a subtle change in the wording when it came to adulterants that might be harmful to health. In the 1872 Act, it was the *ingredients* within a mixture that might be suspected of being harmful, but in the 1875 legislation the question was now whether the *article* itself was 'injurious to health'.

One major improvement in the 1875 legislation was the fact that it was no longer necessary to prove 'guilty knowledge' on the part of the vendor; the simple fact of

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[94] Sale of Food and Drugs Act, 1875, s. 30.
[95] R.C. Chirnside & J.H. Hamence, *The 'Practising Chemists': A History of the Society for Analytical Chemistry 1874-1974,* 1974, p. 61.
[96] The closest the Act comes to any definition of adulteration is contained in section 3, 'No person shall mix, colour, stain, or powder, or order or permit any other person to mix, colour, stain, or powder any article of food with any ingredient or material so as to render the article injurious to health...'. Sale of Food and Drugs Act, 1875, s. 3.
[97] Sale of Food and Drugs Act, 1875, s. 2.

selling adulterated goods was sufficient.[98] While this in itself was an improvement, in some ways, it was negated by the section on 'prejudice'. 'Prejudice' in this context occurred when a purchaser was adversely affected, or disadvantaged by a purchase. Proving this had occurred would become one of the most difficult and confusing areas of the 1875 legislation and will be discussed more fully in chapter four.

Penalties for adulterating an article so as to render it 'injurious to health' remained the same as under previous legislation. A new provision, selling 'to the prejudice of the purchaser' articles not of the 'nature, substance and quality of the article demanded', now incurred a penalty 'not exceeding twenty pounds'.[99]

Under the 1875 Act the appointment of analysts remained permissive and local authorities were only obliged to appoint an analyst if required to do so by the LGB, or in situations where a post that had previously been filled became vacant. Even if local authorities did appoint an analyst there was no legal requirement for them to implement the Act. In effect, this meant that to comply with the law, local authorities might appoint an analyst, but need not appoint inspectors to collect food samples for him to analyse.

While many local authorities at the time chose to ignore or misinterpret the appointments provisions in the 1875 Act, the wording of this section (s.10) continues, even now, to cause a great deal of confusion. In a number of histories

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[98] Douglas C. Bartley, *Adulteration of Food: Statutes and Cases*, (third edition), 1907, p. 65.
[99] Sale of Food and Drugs Act, 1875, s. 3, s. 6.

on the adulteration issue it is asserted that one of the most important aspects of the 1875 legislation was the compulsory appointment of analysts.[100] Clearly this was not the case and failure to make the appointment of analysts compulsory was a major failing of the 1875 Act.

Under the 1875 Act the LGB, when approving the appointment of analysts, had to ensure applicants provided the Board with satisfactory 'proof of competency'.[101] This was in addition to the requirements that applicants 'possess competent knowledge, skill, and experience'.[102] The Act also determined that analysts appointed by local authorities should not be engaged in any trade or business connected with the sale of food or drugs. Under the new Act it was not simply sufficient for analysts to submit quarterly returns to their employing authority; these authorities were now required to submit this information to the LGB on an annual basis for presentation in the Board's Annual Reports. For every sample the analysts' returns were to show the number and type of sample collected, who had collected it, results of the analysis and the amount paid for the analysis.[103]

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[100] Collins,1993, p.103. Rowlinson, 1982, p. 70.

[101] As will be discussed in the following chapter while the Act required analysts to display 'proof of competency', with no recognised test to prove chemical competence at this time it is not clear how the LGB made their decisions as to suitability. Colin A. Russell, Noel G. Coley, Gerrylynn K. Roberts, *Chemists By Profession,* 1977, p. 107.

[102] Sale of Food and Drugs Act, 1875, s. 10. The Adulteration of Food, Drink and Drugs Act, 1872, had required analysts to possess 'competent medical, chemical, and microscopical knowledge'. s. 5.

[103] In 1879 the LGB issued a circular and specimen form to all local authorities giving precise instructions for the completion of quarterly returns. *Eighth Annual Report of the Local Government Board,* 1878-1879, (C.2372) XXVIII, Appendix A, p. 3.

Summary

With the introduction of the 1875 Sale of Food and Drugs Act, there appeared to be improved legal machinery for controlling adulteration. While the legislation did not go as far as some reformers had hoped, in general it was an improvement on earlier Acts. The removal of *mens rea* was one such improvement. Another improvement was that analysts' quarterly reports, formerly only submitted to their local authority, were now to be forwarded to the LGB, aggregated and included in the Board's Annual Reports. For the first time, nationwide levels of sample collection, analysis and adulteration rates could be recorded and compared. However, one major omission within the Act was the failure to make the appointment of analysts compulsory. The reluctance of some local authorities to implement this aspect of the legislation, even with pressure from the LGB, was one of the most important failings of the Act. The establishment of a 'court of reference' for disputed analyses operated by the Excise Department, while a seemingly sensible development was beset by problems not least of which was the failure of the Act to define adulteration or to set acceptable standards for food, drink and drugs. As a result, any benefit from this reference body was often negated by protracted legal arguments between the Excise Chemists and public analysts over the question of standards and the definition of adulteration. While improved legal machinery now existed for the control of adulteration, how effective this might be would depend on the way the Act was implemented both at central and local level. These issues will be taken up in the chapters which follow.

Chapter Three

Central and Local Administration of the 1875 Act

With the introduction of the 1875 Sale of Food and Drugs Act reformers hoped that more effective machinery was now in place for the control and eventual eradication of adulteration. Before discussing how the Act was implemented and assessing whether these optimistic expectations were fully realised, it is essential to understand the role of the organisations and officials responsible for implementation, both at central government level and local level, and to discuss the relationship between these various agencies.

At central government level two agencies were involved in the implementation of the 1875 Act; the Local Government Board (LGB) and the Excise Department. The LGB had overall responsibility for administering the Act, for approving the appointment of public analysts and ensuring that local authorities appointed both analysts and food inspectors. It was also responsible for collating information on adulteration submitted by local bodies and publishing this in Annual Reports. The second central government agency involved was the Excise Department. This department was now designated to act as a 'court of reference' in cases where there was dispute over the result of an analysis.

Implementing the Act at local level were public analysts and inspectors responsible for collecting samples. As the 1875 Act failed to make the

appointment of public analysts compulsory, their appointment was entirely dependent upon the vagaries of local authorities. This was also the case for the appointment of inspectors who collected food samples — one of the most important roles in the implementation of the Act. It was the duty of these inspectors to collect samples of food, drink and drugs from local shopkeepers and submit them to public analysts for analysis. As in the case of public analysts, their appointment was not compulsory and was left to the discretion of local authorities. The 1875 Act extended the range of officials who could collect samples so that, in addition to inspectors of nuisances, inspectors of weights and measures and inspectors of markets, police officers and medical officers could also collect samples. In practice, the officials who usually undertook this role were inspectors of nuisances, inspectors of weights and measures and police officers. In many areas, police officers acted in a number of capacities including weights and measures inspectors, inspectors of nuisances and food inspectors. It is these three types of official, acting as food inspector, that will be discussed in this chapter. The 1875 Act also provided for members of the public to submit samples for analysis but, for reasons that will be discussed later, this facility was little used.

This then was the administrative structure for local implementation of the 1875 Act. A more extended discussion will now follow on how these organisations, departments and local officials implemented their role within the Act. The discussion will also focus on the relationship between the central government

departments and local bodies who were concerned with the more practical aspects of the Act.

The Local Government Board (LGB)

The LGB was responsible for overall administration of the 1875 Sale of Food and Drugs Act. This included approving the appointment of public analysts and urging local bodies to make these appointments. The Board also issued numerous circulars and memoranda to local authorities on various aspects of the Act and published annual statistics on adulteration. The LGB had been created in 1871 following a recommendation of the Royal Sanitary Commission (1869 - 1871) that sanitary provision and the relief of the poor would be more effective if administered by a central authority. As a result the LGB was created from a merger of the former Poor Law Board, the Medical Department of the Privy Council, the Local Government Act Office and the Registrar-General's Office. John Lambert, a former secretary of the Poor Law Board was appointed the first Permanent Secretary and James Stansfield, Liberal M.P for Halifax, as the first President of the new Board. As Roy Macleod observes, 'owing to the circumstances of its birth' the LGB 'was a heterogeneous admixture of administrative precedents, differing salary schedules, and varying conceptions about the nature and function of central authority'. Of particular relevance to the

adulteration issue was the fact that while the Board 'could take central initiative' in some areas, in others it was 'entirely dependent on local initiative'.[1]

The Medical Department of the new Board, the department in which adulteration would eventually be administered, was originally headed by John Simon, the Privy Council Medical Officer. Simon, a doctor by profession, had been appointed the first Medical Officer of Health for the City of London in 1848 and, in this capacity, did much to draw attention to poor health conditions in the City. Appointed as Chief Medical Officer to the General Board of Health in 1855, Simon continued to campaign for sanitary reform and would later be instrumental in bringing about the landmark Public Health Act of 1875.[2] However, in his new role at the LGB, Simon soon encountered a number of difficulties, not least of which was the appointment of a single secretariat composed primarily of former Poor Law Board members, officials who were not noted for their concerns about public health matters or disease prevention.[3] Personal disputes over policy between Simon, Stansfield and Lambert were aired in a very public way and illustrated the difference in outlook and the role each considered appropriate for the medical department.[4] Simon felt particularly aggrieved to be subordinate to men such as Stansfield and Lambert whom he considered were not well

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[1] Roy Macleod, *Treasury Control and Social Administration: A Study of Establishment Growth at the Local Government Board 1871-1905*, Occasional Papers on Social Administration, no. 23, 1968, p. 10. Brand, pp. 14 - 16.
[2] Royston Lambert, 1963.
[3] Brand, p. 24.
[4] Many of these disputes are recorded in the correspondence of the LGB. In one letter Stansfield accuses Simon of wanting to 'administer' where he formally 'advised' and this would lead to the 'absorption sooner or later, by the medical officer and his department, of all the administrative business of the Board', a move strongly resisted by Stansfield. Letter from James Stansfield to John Simon, 23 June 1873, Establishment Growth at the Local Government Board 1873-1902, TNA, MH 78/44.

informed on medical matters; a view confirmed by Herbert Preston-Thomas, himself a general LGB inspector. Speaking about Stansfield, Preston-Thomas noted that he had little appreciation of preventive medicine and 'knew about as much of science as a cow does of conic sections...'.[5] As Jeanne Brand notes, the result of these disputes in the new structure was that 'John Simon and his team were pushed to the background... and Simon's broader sanitary program (sic) was buried in the files of the Local Government Board'. As a result, Simon and his medical staff members found they had little influence on main health policies; a situation that eventually led to Simon resigning his post in 1876.[6] Because of the large number of officials brought into the LGB from the former Poor Law Board, some historians have interpreted the LGB as simply the Poor Law Board under another name. Christine Bellamy suggests that, while this might have been true of the Medical Department, it was less true of other departments.[7] On occasions the Board displayed some inertia when it came to addressing certain issues arising from the adulteration acts. The early conflict of interests as to the role and function of the LGB, and the implementation of health policies, might explain this.

In 1876, the LGB Medical Department was split into two divisions. The first (K1) included the administration of sanitary authorities and districts, local acts and reports of Engineering Inspectors. The second division (K2) had responsibility, among other things, for the reports and returns of medical officers, outbreaks of

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[5] Herbert Preston-Thomas, *The Work and Play of A Government Inspector,* 1909, p. 50.
[6] Brand, pp. 24 - 25.
[7] Christine Bellamy, *Administering central-local relations 1871-1919:The Local Government Board in its fiscal and cultural context,* 1988, p. 127.

disease, vaccination and correspondence relating to sanitary matters.[8] This division also dealt with all matters relating to adulteration.

Dr Edward Seaton succeeded Simon as Medical Officer until he was replaced by Dr George Buchanan in 1879. George Buchanan remained in office until 1892 and while it seems he had autonomy in some matters, the continuing influence of members of the lay secretariat exerted a most powerful influence on the Board. This was particularly true of the Permanent Secretary, John Lambert, who remained in office until 1882. Lambert was noted for his attention to detail and for personally intervening in issues, often without consulting Simon.[9] Evidence of this 'hands-on' approach can be seen in the correspondence between the LGB and local authorities on administration of the adulteration acts. Much of this correspondence contains hand-written comments by Lambert on a variety of issues, ranging from the appointment of analysts to sample collection.[10] As Royston Lambert has observed 'John Lambert's small, neat handwriting is amazingly ubiquitous, remorselessly omnipresent'.[11]

In general it would seem that the quality of staff recruited by the Board was poor; salaries were less than those in other government departments and promotion prospects limited.[12] Roy Macleod cites 'repressive Treasury control' as the factor

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[8] Establishment General Status of the Local Government Board 1873-1902, TNA, MH 78/44.
[9] Brand, p. 25. Lambert, p. 533.
[10] Examples can be seen at The National Archives in: Sussex County Register Correspondence 1872-1882, MH 30/247. Cambridgeshire County Register Correspondence 1872-1882, MH 30/17. Essex County Register Correspondence 1872-1882, MH 30/73.
[11] Lambert, p. 533.
[12] Kenneth D. Brown, 'John Burns at the Local Government Board: a Reassessment, *Journal of Social Policy*, **6**, 1977, pp.157-170, p.163.

which kept salaries low and which also forced the LGB 'to oppose the innovation of fresh policy and the acquisition of new duties'.[13] As Kenneth Brown notes, low salaries and poor staff quality were also 'compounded by the red tape which bound the Board'. This often meant that:

> The opinions of technical experts were frequently over-ruled by members of the lay secretariat, who were usually lacking in any practical experience of the problems with which they were dealing.[14]

The frustrations expressed in the pages of *The Analyst*, the journal of the Society of Public Analysts, by many public analysts at the apparently inept way the Board handled many aspects of the adulteration issue would seem to support this observation.

Despite these frustrations, it has to be said that the LGB, in common with other government departments at this time, dealt with a voluminous correspondence. In 1882 the Board received some 123,344 letters covering a variety of subjects and these were dealt with by just five 'writers' and three 'boy copyists'.[15] Furthermore, it issued a prodigious number of circulars to local authorities on all aspects of the adulteration issue, all of which indicates that there was an attempt to inform local authorities of their duties under the adulteration acts. Many of these circulars outlined specific provisions of the legislation or gave instructions

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[13] Macleod, 1968 p. 8.
[14] Brown, p.163.
[15] Establishment General Status of the Local Government Board, 1873-1902, TNA, MH 78/44.

on the more practical aspects of the Act; such as sample collection, preparation of analysts' reports, or the requirements for submitting samples by post.[16] However, in practical terms the Board did little to ensure compliance with other important aspects of the legislation. They often identified areas where no analyst or inspector to collect samples had been appointed, but they lacked effective powers — or, as seems equally likely, the will — to achieve compliance. Instead they relied on issuing memoranda or attempting to shame wayward authorities into action by naming them in Annual Reports. A typical instance can be seen in the LGB Annual Report for 1880-1881. In this the Board observes that in 'twelve English towns and at least half as many Welsh counties the Act is practically inoperative'. The Report then goes on to note that in the district of St Mary, Newington in London, 'no samples were analysed' while in 'Whitechapel, Shoreditch, Rotherhithe... the number bore an insignificant relation to that of the inhabitants...'.[17]

The 1875 Sale of Food and Drugs Act made it a legal requirement for the analysts' quarterly returns submitted to their employing authority (already a requirement of the 1872 Act), to be forwarded to the LGB. These reports from around the country would then be collated for inclusion in the Board's Annual Reports. The analysts' reports were to include the number of articles analysed together with the results. They showed overall percentage levels for adulteration

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[16] *Fifth Annual Report of the Local Government Board,* 1875-1876, (C.1585) XXXI, Appendix A, p.86. *Eighth Annual Report of the Local Government Board*, 1878-1879, (C.2372) XXVIII, Appendix A, p.3. *Fourteenth Annual Report of the Local Government Board,* 1884-1885, (C.4515) XXXII, Appendix A, p.17.

[17] *Tenth Annual Report of the Local Government Board,* 1880-1881, (C.2982) XLV1, pp. lxxxv-lxxxvi.

as well as levels of adulteration for specific items of food and drink. The Annual Reports also contained information on the number of authorities who had appointed analysts and, from 1887, gave details of prosecutions.

While the 1872 Sale of Food and Drugs Act had made the LGB responsible for approving the appointment of public analysts, the 1875 Act required additionally that the LGB ensure that analysts were suitable for these posts by some 'proof of competency'.[18] Defining chemical 'competency' at this time was particularly problematic with no definitive qualification or recognised awarding body.[19] The appointment of public analysts and their qualifications will be discussed in more detail later in this chapter, but it is important to note here the role of the LGB in ratifying these appointments. The 1875 Act made the LGB responsible for approving appointments and this was undertaken in the Medical Department, initially by John Simon and Angus Smith, the Chief Alkali Inspector. Angus Smith appears to have had an active involvement in this process and a number of his hand-written comments on the suitability of candidates can be seen in LGB documents. On the application of Edward Henry Moore, who was applying for the post of analyst for Lewes in Sussex, Smith wrote that his certificates were 'feeble', while Smith's scribbled approval can be seen on the applications of John Leach as analyst for Dorset in 1879 and Thomas Pooley as analyst for Essex in 1881.[20] However, it seems that the whole ratification process was very much a paper exercise as in few cases was an analyst's appointment not sanctioned by

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[18] Sale of Food and Drugs Act, 1875, s. 10.
[19] Russell, Coley and Roberts,1977, p. 107.
[20] LGB correspondence with Sussex, 28 December 1874, MH 30/247 1872-1882, Dorset, 12 February, 1879, MH 30/60 1872-1882, Essex, MH 30/73 1872-1882.

the Board. Giving evidence to the Select Committee on Food Products Adulteration in 1896 Otto Hehner, public analyst and former President of the SPA, observed that the number of cases where the Board had not given their approval 'cannot touch half-a-dozen'.[21] The competency of public analysts was one of many issues discussed by this Select Committee. First convened in 1894 and covering a three year period, the Committee provided the most extensive discussion on all aspects of the adulteration issue up to this time, meeting on thirty-three occasions and hearing evidence from 68 separate witnesses. Among the various interest groups there was a general consensus that the existing law needed amendment and the Final Report issued in 1896 put forward numerous recommendations as to how this could best be achieved.[22] This Committee is a very useful contemporary exploration of the functioning of the 1875 Act and is a key source for understanding the complexities of the adulteration issue.

Inter-departmental disputes and power struggles within the LGB certainly did not help in the determination of a positive policy towards the control of adulteration. With many other preventive health measures to be considered it is difficult to determine exactly how committed members of the Medical Department were to the adulteration issue. The fact that the Board seemed utterly powerless to ensure that local authorities appointed public analysts led to calls from this group in particular, that the appointment of analysts be made compulsory in future

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[21] Evidence of Otto Hehner *Select Committee on Food Products Adulteration* 1896, (288) IX, Q. 33.

[22] 'Summary of Principle Recommendations', *Report from the Select Committee on Food Products Adulteration*, 1896, (288), IX, p.lxxix. Ingeborg Paulus gives comprehensive coverage to this Committee, pp.42-43, 76-82.

legislation.[23] In summary, it would seem that while the LGB urged local authorities to implement the 1875 Act, it lacked both the motivation and legislative power to effect real change. As Michael French and Jim Phillips observe, this meant that the main impetus for food reform did not come from this quarter, but was left to 'local medical officers, public analysts, business interests and farmers'.[24]

The Excise Chemists

One of the most important provisions in the 1875 Sale of Food and Drugs Act was the facility for cases of disputed analyses to be sent to the Inland Revenue chemists for a second opinion. The decision to set up this 'court of reference' came about largely as a result of evidence given by the business community to the 1874 Select Committee on adulteration. During these hearings, it became clear that a large part of their discontent about the working of existing adulteration legislation centred on what many in the trade felt to be unjust decisions based on the evidence of 'incompetent' analysts. The Select Committee agreed and concluded that much of the failure of existing legislation was due to 'conflicting decisions and inexperience of the analysts'.[25] In an effort to resolve this issue by providing some system of appeal, the 1875 Act made provision for disputed cases to be referred to the Excise Chemists at Somerset

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[23] It was not until the Sale of Food and Drugs Act, 1899, (62 & 63 Vict. c. 51), that local authorities had an absolute legal duty to appoint public analysts and to carry out the various provisions of the Act.
[24] French and Phillips, 2000, pp. 47, 79.
[25] *Select Committee on Adulteration of Food Act (1872)*, 1874, (262) VI, p.iii.

House.[26] In practice this took place once a case had come to court when either party could request that the sample in question be sent to the Excise Chemists for a second opinion which would be delivered in the form of a certificate stating the result of their analysis.[27] A more detailed description of this procedure will be provided in chapter five.

As mentioned in chapter one, the Excise Laboratory had been established in Broad Street, London in 1842 to improve the detection of adulterants in tobacco and thereby increase the amount of import duty collected. Initially, the laboratory was staffed by George Phillips, a serving Excise Officer. In their history of the Laboratory, Hammond and Egan note that Phillips was 'self-educated in chemistry' and had taught himself the principles of chemistry to enable him to detect adulterations'.[28] By 1859, the department had moved into new premises at Somerset House and the volume of work in the laboratory had increased considerably with staff examining over 9,500 samples annually of excisable commodities such as beer, wine, spirits, coffee, chicory, tea and pepper.[29] From its inception, there were criticisms from fellow chemists about the standard of work at the Excise Laboratory, a factor that would have much relevance to their future role as arbitrators. One very vocal critic was Dr Andrew Ure, chemist

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[26] Sale of Food and Drugs Act, 1875, s. 22.
[27] William J. Bell, H.S. Scrivener and C.F. Lloyd, *The Sale of Food and Drugs Acts, 1875 to 1899*, 1903, pp. 65-66.
[28] Hammond and Egan, p. 11.
[29] Hammond and Egan, pp. 37 - 38. A laboratory separate from Somerset House, known as the Custom House Laboratory had been set up in 1861 for the testing of wine. This was later extended to include other alcoholic substances and following the 1875 Act, the testing of imported tea. In 1894 the Custom House Laboratory combined with the Inland Revenue Laboratory at Somerset House to form The Government Laboratory. Sited to the west of London in Teddington and now an Agency of the Department of Trade and Industry, the Laboratory of the Government Chemist as it is now known, continued to act as referee under the more recent Food Act of 1984. Hammond and Egan, pp.103-115, 122, 282.

and scientific writer and a former Professor of Chemistry in Glasgow. Ure had worked as an analytical chemist for the Board of Customs from 1834 and with his own definite views on adulteration was openly hostile to George Phillips, frequently questioning his professional competence to detect adulterants.[30] Ure's challenges on grounds of competence may of course have been partially motivated by the fact that Phillips had, on many occasions, refused to allow him to test samples of allegedly adulterated tobacco when Ure had been asked to do so by an aggrieved tobacco manufacturer.[31]

Despite criticism from other chemists as to their professional competence it was a fact that from the earliest days of the Laboratory, the Excise Chemists had received some form of chemical training. Under Phillips, young Excise officers who showed promise were brought to the laboratory to work with him and from 1846 they also attended chemical lectures at University College, London. In 1858, the Laboratory was reconstituted as a separate Department of the Inland Revenue with George Phillips as its Principal. After 1858, the Board of Customs and Excise considered that training in practical chemistry and microscopy should be undertaken in the Laboratory under the personal direction of George Phillips. Later, trainees would attend theoretical lectures at the Royal College of Chemistry.[32] At the end of their course they undertook a theoretical and practical examination. They also underwent an oral examination that was not required of other students. Many of these Excise students performed very well and, by 1875,

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[30] Hammond and Egan, p.16.
[31] Andrew Ure, *Observations on Fiscal Chemistry*, 1847, pp. 4, 9.
[32] Hammond and Egan, pp. 74-76.

out of 92 who had completed the course, 75 had obtained first class certificates.[33]

While Phillips was always adamant that his department had well-trained staff and was efficient at detecting adulterations, this opinion, as well as his willingness to commit the Department to a greater involvement in the control of adulteration, was seriously questioned by his evidence to the 1855 Select Committee on Adulteration of Food. Giving evidence to this Committee, Phillips considered that as far as detecting adulteration in non-dutiable items the public could 'best protect themselves'.[34] While the department was often accused of being less interested in the health concerns of adulteration than revenue collection, even in this area it was viewed as being highly inefficient. Arthur Hassall, a prominent member of *The Lancet* Commission of the early 1850s, noted that *The Lancet* investigations found adulteration in 'every one of the articles subject to the supervision of the Excise' despite an 'army of 4,000 Excise inspectors'. He estimated the loss to the revenue to be 'millions' of pounds per year. For tea alone Hassall calculated that in the year 1855 this loss was £277,611 8s 0d.[35]

George Phillips retired in 1874 and was succeeded as Principal by Dr James Bell. Bell had himself been educated at University College, London as an Excise student. In 1868 he had been appointed as Inspector for the Port of London to ensure the quality of lime and lemon juice, used to prevent scurvy in seamen,

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[33] *Eighteenth Report of the Commissioners of Her Majesty's Inland Revenue*, 1875, (C.1329) XX.
[34] Evidence of George Phillips, *Select Committee on Adulteration of Food*, 1855, Second Report (480) VIII, Q. 2469.
[35] Hassall, 1857, pp. 32-34, p. 694.

which was supplied to the Merchant Navy. In addition he was also consulting chemist to the Indian Government, a position he held from 1868 to1894. In 1882 he would be awarded a PhD from the University of Erlangen for his work on food analysis and in 1884 he would be elected a Fellow of the Royal Society, indicating that his contributions were esteemed in the scientific community. Bell was anxious that Somerset House staff be well educated in professional matters for their role acting as arbitrators under the 1875 Act.[36] He was also interested in professional matters and 'played a large part in the foundation of the Institute of Chemistry' in 1877, for which the issue of defining professional competence was central. He would serve as its President between 1888 and 1891.[37] He was frequently in correspondence with the Treasury over staffing levels in the Laboratory, working conditions and salaries. While work for the Customs formed the bulk of analyses, increasingly the Laboratory was used by other government departments such as the Post Office, the India Office, the Board of Trade and the Stationery Office. The volume of samples analysed rose dramatically. In 1873, 14,000 samples had been analysed by the Laboratory. By 1884, this had risen to 24,000 samples and, by 1894, to 48,255.[38]

While Bell was regarded by many as a genial man, anxious to support his own staff, he was autocratic and inflexible in his dealings with other professionals, in particular public analysts. His reluctance to communicate with public analysts together with his abrasive defence of his staff and their methods, mean that he

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[36] *The Oxford Dictionary of National Biography*, 2004. Hammond and Egan, pp. 46, 97.
[37] Hammond and Egan, p. 97.
[38] Reports on Special Subjects, TNA, DSIR 26/134. Laboratory Reports and Staff 1894-1897, TNA, DSIR 26/139.

must bear some personal responsibility for the long-running dispute between the Excise Chemists and the Society of Public Analysts that marked the years following the 1875 Act.[39] Relations between the two sides were not helped by differences in pay structure. The Excise Chemists had a formal pay structure based on an annual salary determined by the Treasury. As will be shown in chapter five this was not the case for most public analysts whose pay structures were determined by their employing authorities and varied considerably. In 1877, James Bell as Principal of the Laboratory received £900 per annum. Working in the laboratory at this time Bell had eleven First Class Analysts — those who had completed training — who each received £350 per annum rising by £20 per annum to £500. He also had five Second Class Analysts who received £130 per annum rising by £15 per annum to £300. Two keepers of chemicals each received £70 per annum rising by £5 per annum to £120.[40]

While the introduction of a central reference body to settle cases of disputed analyses had seemed a sensible and welcome inclusion in the Act of 1875, in practice it turned out to be a major constraint to the effective working of the Act. As will be shown in chapter five, the arguments between public analysts and government chemists reached the point of being unseemly and did nothing to promote the professional integrity of either party or enhance the reputation of the reference system.[41]

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[39] Correspondence between Bell and the Society of Public Analysts, 22 January 1878, 30 January 1878, TNA, DSIR 26/118.
[40] 'Laboratory Staff', 23 November 1877, following p.39, Laboratory Correspondence, TNA, DSIR 26/133.
[41] French & Phillips, 2000, p. 44.

Local Government in 1875

The 1875 Act was legislated at a time of great change in local government arrangements. Until the 'take off' of local government in the late 1860s and 1870s responsibility for local affairs had remained at parish and vestry level. [42] While this had worked well for demands earlier in the century, the vestry system had limited powers, and very modest financial resources.[43] This system of local government was ill suited to cope with the increasingly complex problems brought about by factors such as rapid population growth and especially the great expansion of the urban population by the middle of the nineteenth century. As a result, by the 1870s, local government had become extremely complicated as boundaries changed and local authorities multiplied with many replicating the functions of another. As Oliver MacDonagh notes, this resulted in an 'utter medley of authorities' with 'school boards, highway boards, burial boards, constabulary boards and poor law unions often overlapping vestry, borough and parish...'.[44] Such was the spread of these local bodies that a town dweller in the 1870s might find himself 'governed' by five or six local authorities.[45] The Local Government (Board) Act of 1871 attempted to establish administrative order by setting up a central department, but it was not until the 1888 Local Government Act that the system of English local government was completely reorganised,

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[42] Jose Harris, *Private Lives, Public Spirit: Britain 1870-1914,* 1994, p.199.
[43] *The Victoria History of the Counties of England. A History of Essex,* **5,** 1966, p. 32.
[44] Oliver MacDonagh, *Early Victorian Government 1830-1870,* 1977, p. 130.
[45] Geoffrey Best, *Mid-Victorian Britain 1851-75,* 1989, p. 55.

with many administrative duties becoming the responsibility of the new county councils.[46]

Discussing local politics, Mike Goldsmith and John Garrard have observed that the 'one thing they were is local, with penetrations by the centre often bitterly resisted...'.[47] As will be shown in later chapters, this observation is particularly relevant to local authorities and their lacklustre response to many directives from the LGB on the adulteration issue. When discussing the old vestry system, David Owen has observed that financial constraints were a notable feature of this system and that, 'vestrydom was firmly committed to economy as a principle of local government'. He points out that the emphasis on economy reflected the composition of many vestries, made up as they were predominantly of tradesmen.[48] The influence of the business community on local councils did not diminish with the demise of the vestry system; quite the reverse. As the century progressed, the number of shopkeepers on local councils steadily increased. As G.W. Jones has noted, shopkeepers possessed a number of advantages that made them an asset to council membership. They were often well informed about local news and gossip and had many opportunities for 'meeting and influencing people'. They could also find time to attend daytime council meetings by leaving their shops in 'the hands of assistants'.[49] By the 1880s, in many

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[46] MacDonagh, 1977, p.130.
[47] Mike Goldsmith and John Garrard 'Urban governance; some reflections', in Robert J.Morris and Richard H. Trainor (eds) , *Urban Governance*; *Britain and Beyond since 1750.* 2000, p.17.
[48] David Owen, *The Government of Victorian London, 1855-1889*, 1982, pp. 217-218.
[49] G.W. Jones, *Borough Politics*, 1969, pp. 119-120. While Jones is looking specifically at Wolverhampton town council such comments would apply to many town councils.

councils, as many as one quarter were trade members.[50] According to Anthony Wohl, a survey in 1886 of one-fifth of all urban sanitary districts in England and Wales, revealed an even higher proportion of shopkeepers, who were by far the most dominant group, comprising over 30 per cent of sanitary officials.[51]

These findings are confirmed by E.P. Hennock who examined the composition of Leeds Town Council between 1852 and 1888. One of the most notable features he found was that as professional men gradually withdrew from council service there was a steady rise in the proportion of shopkeepers, which by the 1870s had reached unprecedented levels. In 1862, of the 44 members of Leeds Town Council, the professions were represented by six members, retailers by five, of which two were food retailers, while the remaining 33 were merchants and representatives of local industries. By 1876, of the 37 council members, the professions were not represented at all, while twelve members were retailers, five of whom were food retailers.[52]

Many shopkeepers undoubtedly saw local government service as a way of advancing their own businesses while the tendency of any dominant group is to favour policies consistent with their own interests. As will be discussed in the following chapter, one of the principal constraints on the successful implementation of the 1875 Act was the practical difficulties encountered by

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[50] As an example the proportion of shopkeepers on Rochdale council rose from 19.3 per cent between 1856-60 to 25.5 per cent between 1876-80. John Garrard, *Leadership and power in Victorian industrial towns, 1830-80,* 1983, p. 20.
[51] Wohl, pp. 167-168.
[52] E.P. Hennock, *Fit and Proper Persons: Ideal and Reality in Nineteenth-Century Urban Government*, 1973, pp. 202 - 204.

inspectors when collecting samples of food and drink. These difficulties were exacerbated by the fact that inspectors were employed by local authorities and were officially accountable to them. The local authority approved appointments, paid salaries and often decided when, or even if, samples of food and drink would be collected. The decision whether to proceed with prosecutions for adulteration offences, was also often made at this level. Clearly local bodies exerted a significant amount of control over all aspects of adulteration administration. It was therefore a matter of great importance as far as the effective implementation of adulteration legislation, that in the latter half of the nineteenth century increasing numbers of trades people, especially shopkeepers, were members of local councils. While some shopkeepers on local boards may have wished to retain the status quo and oppose the implementation of adulteration legislation, a preponderance of them as members of local boards did not necessarily mean that the introduction of adulteration controls would be thwarted. Other factors were a likely influence on when, or indeed if, a local council implemented the Act and these will discussed in chapter six.

The Public Analyst

The nineteenth century was a time of rapid developments in a wide range of industries such as brewing, the gas and alkali industry and the railway industry, which drew on the skills of analytical chemists. Few of these industries employed full time analysts, relying instead on the independent analytical consultant; sometimes this would be someone holding an academic post, who would make

his services available when required. The role of the chemical consultant would often extend into other areas such as agriculture and, increasingly as the century progressed, into areas of social concern such as river pollution and food adulteration.[53] It was from this group of analytical and consulting chemists, as well as medical men, that the new body of public analysts would be formed.[54]

As mentioned earlier in the chapter, one of the main reasons for setting up a 'court of reference' staffed by the Excise Department had been concerns expressed during the 1874 Select Committee on Adulteration that, because some public analysts did not appear to be competent, incorrect analytical decisions were being made and members of the business community unfairly penalised.[55] With powerful trade opposition and a general perception of incompetence analysts felt they were being blamed for the failure of all adulteration legislation. Many public analysts also saw the setting up of the Excise Department's 'court of reference' as a threat to their professional status. The 1875 Act required an analyst to possess, 'competent knowledge, skill and experience' but how was it possible to define these? At this time there was no recognised test of chemical competence and analysts were without a professional or qualifying body, unlike their medical colleagues.[56]

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[53] Russell, Coley and Roberts, pp. 94-109.
[54] Chirnside and Hamence, 1974, p. 3
[55] Questions as to the competence of public analysts had been raised ever since the first adulteration Act of 1860. At this time T.C. Haliburton, Conservative MP for Launceston, considered that there were not 'half a dozen persons in the country fit to be analysts'. *Hansard* CLVII March-April, March 14 1860, p. 546.
[56] Russell, Coley and Roberts, p. 107.

The 1874 Select Committee had suggested that, before analysts were appointed, the LGB should require some proof of their having passed a practical test of efficiency such as an examination at the Royal College of Chemistry at South Kensington. However, this course of action was not followed and it would seem that even after the implementation of the 1875 legislation, the LGB continued to work to the criteria used for the 1872 Act when assessing the competence of applicants. The 1872 Act required analysts to have 'competent medical, chemical and microscopical knowledge'. Evidence to support these qualifications was recommended as follows:

1. Medical knowledge. Proof that the applicant is duly registered to practice as a medical man, or in default of this proof that he has made a special study of the influence of adulterations on health.
2. Chemical knowledge. The production of diplomas or certificates given in respect of such knowledge, or evidence that the applicant has been engaged in, or is proficient in, chemical research. The following may be accepted as proofs of chemical knowledge: (a) to have published good matter on chemical subjects, (b) to have practised reputably as a chemist, (c) to have worked in a chemical laboratory as assistant for a sufficient length of time, and at sufficiently refined work, (d) to have good certificates which will stand the test of enquiry, (e) to have passed some of the higher examinations, especially of late years.

3. Microscopical knowledge. Proof that the applicant has been engaged in microscopical investigations and is proficient in the use of the microscope.[57]

The Board noted that it might not always be feasible for local authorities to secure the services of persons possessing all these qualifications and they considered the most desirable qualification to be 'competent chemical knowledge'.[58] This would remain the case until 1900, when the LGB issued a circular which, for the first time, gave clear details of all professional requirements needed for the post of public analyst.[59]

In the event, it is hardly surprising that analysts appointed under the 1875 Act, came from a wide variety of backgrounds. Some had formal chemical training, some were Medical Officers of Health with little chemical training, while others had a background as pharmaceutical chemists, so would have had chemical expertise.[60] Public analysts were not expected to act full-time in that capacity. As will be shown in chapter five, many held a great variety of other professional positions. Some were consultants, either in a private practice or consultants to industry, while others held academic or medical posts.

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[57] Thomas Herbert, *The Law on Adulteration*, 1884, p. 91.
[58] Herbert, 1884, p. 91.
[59] The LGB required proof of competency in (a) analytical chemistry (b) therapeutics (c) microscopy. As evidence of this the Board accepted the Diploma of the Institute of Chemistry 'together with the certificate granted by the Institute after an examination, conducted by them on lines approved by the Board in therapeutics, pharmacology and microscopy'. Appointed as a public analyst a medical practitioner, in addition to his medical qualifications, was also required to provide evidence of 'competent skill in and knowledge of analytical chemistry'. 'Public Analysts: Regulation as to Competency', *Thirtieth Annual Report of the Local Government Board*, 1900-1901, (Cd. 746) XXV, Appendix A, p. ccxvii.
[60] The Pharmacy Act 1868 restricted practice to properly qualified registered persons. Ernst Stieb, 1966, p. 294.

The Society of Public Analysts (SPA)

The damning criticisms of the 1874 Select Committee on the competence of analysts and the proposal by that Committee that disputed analyses should be submitted to a reference body staffed by Excise Chemists, was the stimulus for analysts to improve their status by forming their own professional association. Two well-known public analysts, Charles Heisch and George Wigner convened a meeting of public analysts in London in August 1874 at which it was decided that a Society of Public Analysts (SPA) be formed. The formation of this important pressure group can be seen as part of the general professionalisation of groups with scientific or technical expertise, such as public analysts, medical officers and sanitary officials occurring at this time. As Dorothy Porter notes, the 'construction of health policy was increasingly determined by professionals legitimised by the authority of specialist knowledge not only in central but in local government'.[61] The initial meetings of the Society were much taken up with discussions of proposals for the Adulteration Bill of 1875 and it is clear that analysts themselves wished to see their appointment made compulsory in the new legislation. It was decided that membership of the Society be limited to public analysts only.[62] Initially, without a professional journal of their own, *The Chemical News* was the medium used to publish information on professional issues. By 1877 public analysts had their own journal *The Analyst* which had the

[61] Dorothy Porter, 1999, p.137.
[62] *Proceedings of the Society of Public Analysts,* **1**, 1876.

declared aims of keeping them up to date with analytical techniques and disseminating information about adulteration.[63]

These early meetings of the SPA also attempted to set analytical standards for food and drink such as butter, milk and tea. Milk was 'deemed adulterated if it contained less than 9 per cent. by weight of milk solids-not-fat, or less than 2.5 per cent. of butter-fat basis'. Butter was to contain 'not less than 80 per cent. of butter fat' and tea was to contain 'not more than 8 per cent. of mineral matter...'. These definitions were distributed to official bodies such as Metropolitan Magistrates, Clerks of Local Boards and Vestries and to the Medical Department of the LGB.[64] These standards had the status only of suggestions with no requirement for any authority to adhere to the SPA recommendations. The issue of standards will be discussed in more detail in the following chapters, but it should be noted that this issue was one of the most important areas of dispute among public analysts themselves and, more importantly, between public analysts and the Excise Chemists. At a time when analytical organic chemistry was beginning to develop rapidly, there was considerable disagreement amongst chemists not only about standards of purity, but also about which analytical methods were most appropriate to determining adulteration. Confusion on this issue continued for the rest of the century and was not really resolved until certain standards were included in the 1899 Sale of Food and Drugs Act.

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[63] *The Analyst*, **2,** (13) 1877.
[64] Bernard Dyer and C.Ainsworth Mitchell, *Fifty Years of the Society of Public Analysts*, 1932, p. 3.

During the early meetings of the SPA there were also discussions about the profession's low status and suggestions as to how this might be improved, although the society did not suggest setting its own qualifications.[65] Particular concern was also expressed about combined posts in which MOHs also worked as public analysts. Analysts bitterly resented this practice and considered that many medical men were not chemically competent to undertake food analyses. They were also concerned that conflicting or incorrect decisions by MOHs about adulteration reflected adversely on the professional competence of all public analysts. Addressing the Association of Medical Officers of Health in 1872, Henry Letheby had echoed the views of many public analysts when he stated that MOHs were, 'not as a rule properly competent to perform chemical and analytical work'.[66] This problem was again raised during the Select Committee on Adulteration in 1874. As Alfred Allen, Public Analyst for Sheffield noted, there was 'nothing in the training of a medical man to make him a chemist'. He also noted that many medical men practising as analysts, were doing so after only a few months in a laboratory, while Allen considered that at least four or five years training there was the absolute minimum necessary to be fully competent.[67]

The question of low pay was a contentious issue for many analysts equated as it was with low status. Each local authority was responsible for setting pay rates for its analyst and this of course meant that rates varied considerably from area to area. Not only did rates of pay vary between local authorities but how these were

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[65] Bud and Roberts, 1984, p.159.
[66] Leading Article, *The Lancet,* **2**, October 1872, p. 608.
[67] Evidence of Alfred Henry Allen, *Select Committee on Adulteration of Food Act (1872)*, 1874, (262) VI, Q. 3548.

paid also varied. As a result a confusing medley of pay and conditions resulted. This issue, constantly addressed by the SPA, did little to assist effective implementation of the Act and will be discussed in more detail in chapter five.

The Medical Officer of Health (MOH)

While some fifty medical officers had been employed throughout the country prior to 1872, the Public Health Act of that year made it obligatory for all sanitary authorities throughout England and Wales to appointment a medical officer.[68] In 1873 the total number of MOHs for England and Wales was 288. By 1890 some 1,492 MOHs were in post.[69] Following the creation of the role, one of the chief areas of concern, expressed as much by medical colleagues as others, was the suitability of the medical officer for his role in preventive medicine. In 1872, *The Lancet* pointed to their lack of this expertise and noted that some medical officers 'were not much better informed than other persons...'.[70] The 1875 Public Health Act did require all medical officers to be legally qualified medical practitioners but it was not until 1892 that it was necessary for the medical officer to possess a qualification in public health.[71] Thus, quite apart from concerns about their competence as public analysts, the competence of medical men in the area of public health was also contested as the 1872 and 1875 adulteration acts came into force.

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[68] Public Health Act 1872, (35 & 36 Vict. c. 79). In 1888 the Local Government Act permitted County Councils, which were created under the Act, to appoint County Medical Officers. Wohl, pp.182-183.
[69] *Third Annual Report of the Local Government Board,* 1873-1874, (C. 1071) XXV. *Twentieth Annual Report of the Local Government Board*, 1890-1891, (C. 6460) XXXIII.
[70] 'The Duties of Medical Officers', *The Lancet*, **3**, February 1872, p.165.
[71] Public Health Act 1875, (38 & 39 Vict. c. 55). Brand, p.109.

In 1872, the Local Government Board issued a detailed eighteen point circular to all sanitary authorities outlining the duties of the medical officer. In general, these required him to be well informed of the sanitary conditions existing within his area and to do this by inspection and recording. He was also required to advise the authority on matters of health and report without delay outbreaks of contagious disease. He was required to submit an annual report to the LGB indicating causes of sickness and mortality. His role in controlling unfit food was contained in section eight of the circular which gave him powers to inspect food such as animal carcases, fish, vegetables and other items which, if he found to be 'diseased, or unsound, or unwholesome, or unfit for the food of man...' he was empowered to have seized and dealt with by the Justices.[72] Thus in their MOH role, they did have a certain level of responsibility for matters relating to food. As noted earlier, under the 1875 Sale of Food and Drugs Act the MOH was included in the list of officials who could be appointed as inspectors to collect samples of food if adulteration was suspected. This was a separate role performed under the direction of the local authority.[73] If the medical officer came into contact with adulterated items while fulfilling the functions of section eight of the LGB's circular on the duties of the MOH, then he would put into place the necessary procedures to have the sample analysed by the public analyst.

Just as some local authorities were reluctant to appoint a public analyst, they displayed the same dilatory attitude to the appointment of their medical officer.

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[72] 'Rural Sanitary Authority — Regulations: Medical Officer of Health', *Second Annual Report of the Local Government Board*, 1873, (C. 748) XXIX, Appendix A, No. 27, p. 48.
[73] Sale of Food and Drugs Act, 1875, s.13. While the Act authorised MOHs to act as inspectors and collect food samples, it was far more common for inspectors of nuisances, inspectors of weights and measures, or police officers to perform this function.

To comply with the law, some local authorities would appoint a medical officer but would often give him a salary so low as to ensure that he did very little. As Anthony Wohl has observed, this salary was, in 'many cases not much higher than those earned by the slum - dwellers visited by the MOH...'. [74] Some medical officers were part-time and a salary of forty to fifty pounds per annum was not uncommon. In 1881, Woodford Local Board spent some time deliberating whether or not to pay their medical officer thirty or forty pounds per annum, eventually settling for the lower figure. By 1891, this figure would only rise to £75 per annum.[75] While the 1872 Public Health Act made provision for the LGB to contribute half the MOH's salary, this was on condition that the person appointed was approved by the Board. The LGB thus had the power to determine the duties and salary of the MOH as well as deciding the length of tenure.[76] However, many local authorities demonstrated their distrust of central government control and opted to retain control of their own appointments by paying the full salary themselves.[77] The reluctance of some local boards to comply with any direction from the LGB was highlighted by *The Lancet* in 1872 which noted that 'at most health boards there is a manifest disposition to kick against the hints of the central authority'.[78] The often strained relationship

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[74] Wohl, p. 186.
[75] Woodford Local Board of Health Minutes 1881-1884, p. 5, Woodford Local Board of Health, General Purposes Committee, 1895-1900, p. 38. London Borough of Redbridge, Local Studies Centre.
[76] *Second Annual Report of the Local Government Board,* 1873, (C. 748) XXIX, Appendix A, No. 27, p. 48.
[77] The deliberations by a local board on this point are illustrated in the minutes of the Woodford Local Board of Health 1881-1884. After much deliberation this Board eventually decided to retain some control over their medical officer by paying his full salary. A similar instance has been noted by E.P Hennock when in 1872 Leeds Corporation also refused to accept half the Medical Officer's salary from the Local Government Board. As Hennock notes, 'in the course of the debate it became apparent that the ability to check the actions of an overzealous medical officer was a power highly valued by the members of the Council...' . Hennock, 1973, p. 214.
[78] 'The Adulteration Act', *The Lancet,* **2**, October 1872, p. 758.

between local authorities and central government departments such as the LGB made the tenure and role of medical officer a very uncertain one. As Jeanne Brand has observed, the lack of a central medical authority the MOH might consult, combined with the somewhat loose relationship with the LGB, made for a 'great diversity in standards of performance throughout England and Wales'.[79]

Another important consideration that determined the effectiveness of the MOH was the composition of the local authority. Many board members were of the smaller property owning class, a feature that could be problematic when it came to questions of public health such as slum housing. As *The Lancet* had observed in 1868 the principle of local self-government was a 'drawback' in all sanitary legislation as many important sanitary powers were entrusted to 'local authorities, constituted largely of a class against whom those powers ought most frequently to be exercised'.[80] Anxious to protect their own interests the members of many local boards were either opposed to sanitary improvement or took little interest, a fact noted by a MOH in a 1885 report to the LGB. 'Sanitary administration is often distasteful to existing rural authorities'. This 'shows itself in a variety of ways ...one of these is a not uncommon practice of the retirement of members from board meetings as soon as sanitary business arises'.[81] The composition of local councils, be it the preponderance of shopkeepers unwilling to see adulteration legislation introduced, or small property owners unwilling to

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[79] Brand, p.112. This 'diversity' was highlighted by the LGB who constantly drew attention to the great variation in standards of report submitted by MOHs, many of them 'destitute of information' *Seventh Annual Report of the Local Government Board,* 1877-1878, (C. 2130) XXXVII, p. cxv.
[80] 'Housing Accommodation for the Poor', *The Lancet*, February 22 1868, p. 265.
[81] Report by Dr Ballard, *Fifteenth Annual Report of the Local Government Board*, 1885-1886, (C. 4844) XXXI, Appendix No. 7, p.123.

see housing improvements effected by the medical officer, had an important and often deleterious influence on the implementation of policy the result of which cannot be overemphasised.

Where the role of MOH was not combined with that of public analyst, most MOHs apparently displayed little interest in the adulteration issue.[82] *Public Health,* the journal of the Incorporated Society of Medical Officers, with a first volume published in 1888, made little mention of the subject.[83] As noted earlier, where the role of MOH was combined with that of public analyst this role was not popular with analysts and the SPA continually drew attention to the undesirability of combined appointments. In 1893 the SPA called for an end to the practice, noting that the 'smattering of analytical knowledge' required to hold a Diploma in Public Health (a requirement for MOHs from 1892) 'in no way qualifies the holder as a public analyst'. The SPA also consistently criticised the very low fees paid by local authorities for MOHs to work as analysts and considered this also brought the office of analyst into 'contempt'.[84]

The Inspectors Nominated to Collect Samples

While the 1872 Adulteration Act was the first to provide for the appointment of inspectors to collect food samples, the category of persons who could undertake

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[82] The LGB raised this point many times. In the Annual report for 1876-1877 it noted that MOHs should spend more time protecting against disease by removing 'all conditions likely to injure health' instead of involving themselves exclusively with outbreaks of disease. *Sixth Annual Report of the Local Government Board,* 1876-1877, (C. 1865) XXXVII, p. xciii.
[83] As Jeanne Brand notes, the minutes of the Society are 'almost devoid of any mention of adulteration'. Brand, 1965, p. 132.
[84] In one case a MOH was paid just £5 per annum to work as a public analyst. *The Analyst,* **18**, 1893, p. 97.

this role was extended in the 1875 Sale of Food and Drugs Act. This Act determined that officials permitted to collect samples would be: medical officers, police constables, inspectors of nuisances, inspectors of weights and measures or inspectors of markets. In practice, food inspectors employed by local authorities were usually the inspector of nuisances — later called the Sanitary Inspector and in modern times the Environmental Health Officer, the Inspector of Weights and Measures — now the Trading Standards Officer, or a police officer. In many areas, the local police officer acted in a great variety of capacities including that of weights and measures inspector and food inspector. As noted earlier, although the medical officer was permitted to obtain food samples under the Act, this was not a usual practice.

The introduction of designated food inspectors to implement adulteration legislation is an example of the great increase in inspection that occurred during the nineteenth century, which has been discussed by Oliver MacDonagh. In his five stage model of government growth, MacDonagh sees the appointment of inspectors as 'a step of immense, if unforeseen, consequence'. It was these men who were responsible for carrying out many of the statutory regulations imposed by Parliament, regulations that had come about and were set in motion by the first stage of MacDonagh's model, the 'exposure of social evils'. As MacDonagh notes, with the appointment of these inspectors there was, for the first time, 'a body of persons, however few, professionally charged with carrying the statute into effect'.[85] The first central government inspectorate, the Anatomy

[85] Oliver MacDonagh, 1958, pp. 58-59.

Inspectorate, was established in 1832 followed rapidly by numerous other inspectorates who were soon overseeing factories, weights and measures, railways, prisons, schools and mines. Inspectors were soon regulating many aspects of Victorian life and their growth in numbers was so rapid and all encompassing that W.L. Burn considers the nineteenth century could be termed 'the age of the inspector'.[86] Unlike central government inspectors, the officials concerned with collecting food samples remained under the control of local bodies. Despite frequent calls from reformers that centralization would make for more efficient implementation of the 1875 Act, this move was continually resisted.

In her discussions of the enforcement procedures of environmental health officers, Bridget Hutter has observed that it would be wrong to always equate the role of 'enforcement' simply with prosecution and a much wider understanding is appropriate. Compliance may be achieved in many other ways such as through 'negotiation, bargaining, education and the offering of advice...'.[87] How compliance may be achieved in this manner, rather than by prosecution, has been the subject of much detailed research by Peter Bartrip and Paul Fenn. Basing their studies on the way 'regulatory style' evolved in the Factory Inspectorate during the nineteenth century, these authors argue that constraints were the 'crucial determinants of inspectoral policy and practice' and directly influenced the type of enforcement used. While prosecution may be the end result the methods used to secure compliance with the law will depend a great

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[86] W. L. Burn, *The Age of Equipoise; a study of the mid-Victorian generation*,1964, p.17.
[87] Bridget M. Hutter, *The Reasonable Arm of the Law? The Law Enforcement Procedures of Environmental Health Officers*, 1988, p. 5.

deal on these constraints.[88] Although these authors based their discussion on central government inspection, the Factory Inspectorate in particular, the constraints they draw attention to such as inadequate funding, limited manpower or shortcomings in the law were also factors that had much relevance to adulteration and the effectiveness of local implementation, issues that will be discussed in later chapters. It is important to note, however, that with a central government inspectorate such as the Factory Inspectorate, or the Alkali Inspectorate, there is much evidence to support Bartrip and Fenn's concept that when faced with many of the constraints mentioned above inspectors would, in some cases, not prosecute but rely instead on 'persuasion and threats to encourage compliance'.[89]

Local inspectorates concerned with sample collection operated in a context of similar constraints, and these undoubtedly affected the way the 1875 Act was implemented. However, when it came to adulteration offences, there is far less evidence at the local level to indicate that inspectors themselves negotiated any form of compliance from the traders they visited. Few inspectors wrote about their experiences and their day to day activities, such as sample collection, have been poorly documented by historians. It seems unlikely for example, that these inspectors took the time or the trouble to 'educate' traders on the dangers of adulteration. On the contrary, there is some suggestions in the historical record that inspectors were encouraged to turn a 'blind eye' to some offences and were

[88] Bartrip and Fenn, 1983, p. 218.
[89] Bartrip and Fenn, 1983, pp. 217 - 218.

sometimes given bribes by traders to do so.[90] It would also seem likely that some form of accommodation was reached between inspectors and shopkeepers. As most inspectors lived and worked within the same area, most would not have wished to upset their neighbours in the business community by implementing the Act too vigorously. This would have been especially true where police officers acted as food inspectors. The co-operation of the local community was vital in assisting the police with criminal matters and there is some evidence of compromise between the police and local traders over adulteration matters.[91]

The differences in education, background and social status between local government inspectors and centrally appointed inspectors also resulted in differing interpretations of their work. The educated, professional, central government inspector saw his task more in terms of applying his expert knowledge to situations rather than in narrower terms of simply detecting a criminal offence. Because of his expert knowledge in the field, his methods of seeking compliance were more likely to be that of persuasion to enforce the statute rather than what W.L.Burn terms the 'damn 'em, ram 'em method'.[92] In contrast, as Gerald Rhodes observes, local government inspectors were of a lesser status and tended to take a more restricted view of their functions.

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[90] As one witness to the 1894 Select Committee noted, in some districts inspectors were 'lax' and they 'wink at offences'. It was felt that even if local authority officials were aware of this they were reluctant to do anything about it as so many of them were trades people. Evidence of John Carey Lovell, *Select Committee on Food Products Adulteration*, 1895, (363) X, Q. 98. Allegations that inspectors were bribed were also made in *The Sanitary Inspector's Journal*, **1**, June 1895.

[91] As the LGB note in the Annual Report of 1911, 'it was the aim of one police officer engaged in sampling to keep on good terms with the shopkeepers, as they were often able to give him information of value from a police point of view...', *Forty-first Annual Report of the Local Government Board,* 1911-1912, (Cd. 6331) XXXV, p. lx.

[92] Burn, 1964, p. 225.

Additionally, their activities were often 'constrained by the attitudes of the local authorities which employed them'.[93]

This last point is important as the attitude of local authorities towards adulteration and the issue of inspection was seldom positive. Some authorities were openly hostile while others seemed ambivalent. As Peter Bartrip notes, this ambivalence reflected feelings in society at large towards 'state intervention in private concerns'.[94] Added to these problems was the fact that many magistrates, or members of local councils who had responsibility for appointing inspectors, were themselves shopkeepers and traders. As a local authority employee, the inspector often found himself in a situation where he was taking samples from the very people employing him. This could have serious repercussions for the inspector. The 1896 Select Committee heard evidence suggesting that in some cases inspectors who had been particularly vigilant were 'punished' by their local authority by not being re-appointed. Often members of these councils were themselves guilty of adulteration and the Committee heard evidence that eight members of one council in London had been convicted for offences under the 1875 Act.[95]

As will be shown throughout this thesis, allowing local authorities to have such complete control over the inspector and the way he performed his role was a major failing in the 1875 legislation and would prove to be a principal constraint on effective and reliable sample collection.

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[93] Gerald Rhodes, *Inspectorates in British Government*, 1981, p. 177.
[94] Bartrip, 1982, p. 617.
[95] *Select Committee on Food Products Adulteration*, 1896, (288) IX, Q. 116.

The Inspector of Nuisances

First seen in the early-nineteenth century, the inspector of nuisances was regarded as a 'poorly paid and lowly figure within urban government'.[96] Few inspectors were appointed until the Public Health Act of 1848, which created Local Boards of Health responsible for sanitary provision. The inspector's terms of employment were very similar to that of the MOH. Following the establishment of the LGB in 1871, the Board was to have some say in the inspector's appointment and his duties and tenure of office if they paid any part of his salary, otherwise this was to be the sole responsibility of the local authority employing him. As far as his duties were concerned, although supposedly independent of the MOH, the inspector of nuisances was in effect his 'right-hand' man, undertaking all duties in areas covered by the MOH.[97] If an area wished their inspector of nuisances to fulfil additionally the function of the food inspector then, to comply with the law, he was required to be appointed as such under the 1875 Sale of Food and Drugs Act. In effect, this meant that some inspectors operated solely as inspectors of nuisances under the Public Health Acts while others operated in this role but were also inspectors who collected food samples.[98] A problem in common with other inspectorates was the small numbers of inspectors, particularly in London. In 1885 for Mile End there was one inspector

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[96] P. Brimblecombe, 'Historical perspectives on health. The emergence of the Sanitary Inspector in Victorian Britain', *The Journal of the Royal Society for the Promotion of Health*, June 2003, **123**, (2), pp. 124-131, p. 124.
[97] 'Rural Sanitary Authority —— Regulations: Inspector of Nuisances'. *Second Annual Report of the Local Government Board,*1873, (C. 748) XXIX, Appendix A, No. 26, p. 50.
[98] Francis Vacher, *The Food Inspector's Handbook*, (fifth edition) 1909, p. 30.

of nuisances to every 105,000 of the population, in Islington one for every 56,000 and in St. Pancras one to every 59,000.[99]

While the 1875 Public Health Act outlined the qualifications required for MOHs, it did not do the same for inspectors of nuisances. Indeed, one of the chief problems with the role was that no special training was required of an individual who undertook it. As Christopher Hamlin notes, the authority of this 'professional nuisance-knower' was to be accepted without the 'usual accoutrements of authority'.[100] As a result the role tended to attract men of a lower calibre with a consequent lack of status.

However, in common with other professional groups, the development of organisations that represented sanitary officials was to play an important part in the professionalisation and improved status of the Inspector of Nuisances. The Sanitary Institute, which had been created in 1875, established a qualification for the post of inspector of nuisances, with the first examinations taking place in 1877. This examination soon became the accepted standard of quality, and by 1891, 91 local authorities refused to appoint inspectors who did not hold The Institute's certificate.[101] The Sanitary Inspectors Association (now the Chartered Institute of Environmental Health) was established in 1883 and did much to raise

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[99] *Royal Commission on the Housing of the Working Class,* (First Report), 1885, (C. 4402) XXX, Q. 263.
[100] Hamlin, 2005, p. 42.
[101] The Royal Society for the Promotion of Health, 125th Anniversary & Annual General Meeting, 22 May 2001, p. 6.

the status of its inspectors.[102] However, *The Food Inspector's Handbook*, first published in 1892, could still define the requirements for the role, in terms of moral qualities. It decreed that, among other requirements the food inspector should be 'healthy and strong with 'his organs of special sense' in 'good order' and to be 'truthful and honest'.[103] However, there is evidence to suggest that some men holding the post of inspector of nuisances did not always fulfil these criteria.[104]

The Inspector of Weights and Measures

The purpose of weights and measures inspection is to verify the accuracy of weights and measures used for trading purposes in order to prevent fraud. While the Assize system introduced in the thirteenth century was used to regulate the weight of a loaf and the quantity of ale, a uniform system of weights and measures inspection was not introduced until an Act of 1824. This decreed that all weights and measures should conform to new imperial standards. An Act of 1835 provided for the appointment of inspectors of weights and measures by local Justices and this can be seen as the real starting-point of a local weights

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[102] Brimblecombe, p. 125. The journal of the Association, *The Sanitary Inspector's Journal*, first issued in 1895, provides a very useful insight into the way a professional organisation viewed the adulteration issue and the daily problems its members encountered when implementing the 1875 Act.

[103] Vacher, pp. 3-6

[104] In the records of The National Archives there is a 'Black Book' containing charges against officers such as MOHs and Inspectors of Nuisances who failed to do their duty. Between 1875 and 1880 some 56 inspectors of nuisances were dismissed by their employing authority for reasons such as 'intoxication', 'did nothing', or 'irregularities of accounts'. While some MOHs are also named in this file by far the largest group of officials dismissed from their posts are inspectors of nuisances. The 'Black Book' Notes of Enquiries into Charges Against Officers. TNA, MH 155/1.

and measures inspectorate.[105] As Gerald Rhodes notes, these acts depended on two elements which were in practice quite distinct. The standards to which all weights and measures were required to comply were set by the Exchequer. However, the only means of ensuring that traders complied with these standards was by a system of local inspectors. The only control central government had over these inspectors was to ensure they were using officially approved standards, otherwise the inspectors were answerable to the magistrates who had first appointed them.[106]

In the middle of the nineteenth century, weights and measures administration was different from 'other regulatory functions of the time'. It was 'neither an exclusively central government responsibility, like inspection of factories or mines', nor solely 'a responsibility entrusted to local authorities'.[107] There were obvious problems with such a system. Firstly, there were no agreed qualifications for inspectors. Secondly, there was no central administration to issue instructions to inspectors or oversee their work and thirdly, there was no supervisory body to investigate how the work was done.[108] Many local authorities gave a low priority to the inspection of weights and measures; posts could remain vacant for many years. This was especially important in areas where duties for sample collection under the 1875 Food and Drugs Act had been allocated to inspectors of weights and measures.

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[105] Rhodes, p. 33.
[106] Rhodes, p. 34.
[107] Rhodes, p. 34.
[108] Rhodes, pp. 34 - 35.

As Gerald Rhodes has observed, central government inspectors, because of their 'professionalism and relative freedom', always enjoyed a 'higher status' and were more likely 'to have their views taken seriously' than local authority inspectors who were often men of 'humbler status'.[109] An indication that this generalisation can be applied to weights and measures inspectors can be found in the 1870 Report of the Standards Commission, which shows that very few men were full-time inspectors but combined the role of weights and measures inspector with a wide range of other occupations. In Cornwall one inspector was also a 'watchmaker', while another was a 'carpenter and joiner'. In Kent, 'builder', 'boot maker' and 'hairdresser' were among the occupations listed. Norfolk boasted a 'leather-cutter' while Staffordshire listed a 'house-agent' and 'ironmonger'.[110] These occupations contrasted greatly with the more professional backgrounds of many in the central inspectorates where men were often from a class and background similar to those they were regulating. In the Alkali Inspectorate even those employed at the lowest level as laboratory assistant to the Chief Inspector, were likely to have a doctorate.[111]

An average annual salary for a man acting solely as a weights and measures inspector was approximately £50 per annum. A police inspector could expect to earn £110 per annum, while a police constable (first class) could earn

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[109] Rhodes, p. 170.
[110] *Report of the Standards Commission,* 1870, (C. 30) XXVII, Appendix iii.
[111] Christine Garwood, 'The British State and the Natural Environment: with Special Reference to the Alkali Inspectorate', unpublished PhD, thesis, University of Leicester, 1998, p. 82. With limited non-academic employment opportunities for those with doctorates, the Alkali Inspectorate was an attractive option.

approximately £72 per annum.[112] In part, the problem of low status experienced by weights and measures inspectors could be explained by the fact that, in many cases, 'they lacked a separate identity' with the role frequently combined with that of police officer. In 1866, out of 731 inspectors of weights and measures in Great Britain, 476 were police officers while only 46 of the remaining 255 had no occupation other than that of inspector of weights and measures.[113]

The Police Officer

The Police Act of 1856 had for the first time empowered magistrates 'to oblige the police to perform work other than that involved in keeping the peace'.[114] This involved a great variety of additional duties. In the county of Essex in 1878 with a total force of 293 officers, fifteen members of the force acted as Inspectors of Weights and Measures, three as Inspectors of Common Lodging Houses, twenty as assistant relieving officers for vagrants, eighteen as inspectors under the Contagious Diseases (animals) Act, fifteen under the Sale of Food and Drugs Act and seventeen under the Explosives Act.[115] As Carolyn Steedman notes, 'between 1856 and 1880, 40 of the 43 English administrative counties used the county police force to inspect weights and measures' as well as performing other additional duties. For the same period, policemen were also employed as inspectors of nuisances in nine counties. By the beginning of the twentieth

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[112] *Reports of the Inspectors of Constabulary*, 1884-1885, (88) XXXVII, (Essex).
[113] Rhodes, pp. 35-36.
[114] Carolyn Steedman, *Policing the Victorian Community*, 1984, p. 53.
[115] *Reports of the Inspectors of Constabulary* 1878-9, (41) XXX111.

century, thirty-eight counties were still using policemen as inspectors of weights and measures.[116]

Within the police service, inspectors of weights and measures came from a variety of ranks. For example in Essex in 1875, out of a total strength of 291 men in the County force, nine superintendents, four inspectors and one sergeant acted as inspectors of weights and measures. In the Boroughs of Colchester and Maldon, the Head Constable also acted as inspector of weights and measures.[117] In 1895 in the County of Norfolk, out of a total force of 240, fifteen officers acted as inspectors under the Act, thirteen were Superintendents and two were Inspectors.[118] It was also not uncommon for officers to be permanently detailed off to perform this duty. These men were termed 'lent' officers, a practice that often led to considerable problems when it came to determining who was responsible for paying salaries and pensions.[119] As well as collecting samples the police also became involved in many of the more mundane aspects of the 1875 Act, such as negotiating with the public over payments for analysis or taking in samples of food waiting for analysis and storing them in police stations.

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[116] Steedman, p. 53.
[117] *Reports of the Inspectors of Constabulary*, 1875, (18) XXXVI.
[118] *Reports of the Inspectors of Constabulary,* 1896, (167) XLII.
[119] These difficulties are illustrated in the case of Colonel Story a 'lent' constable in Nottinghamshire who spent all his time acting as a weights and measures inspector. Problems arose in 1888 following the Local Government Act which made him a servant of the County Council. The District Auditor objected to paying him on the grounds he was not a full-time police officer. A great deal of correspondence on the issue took place which was finally resolved by Story being appointed as County Chief Inspector of Weights and Measures. Employment of Police in Weights and Measures, TNA, HO 45/9699/A50107.

This was a particularly unpopular task as samples could often be left for weeks or months before being collected and taken to the analyst.[120]

Summary

In contrast to earlier legislation, which had failed largely because it lacked an efficient enforcement system, reformers hoped that the 1875 Sale of Food and Drugs Act, by increasing the range of officials who could implement the legislation at local level, would put in place adequate provisions to improve food quality. However, as we have seen the responsibility for appointing these officers was a local and purely optional one that many local councils were clearly unwilling to adopt.

The outcome of the 1875 Act was shaped by the response of local government. While it could be argued that the very localised nature of inspection was an advantage in so far as officers had detailed local knowledge of an area and its inhabitants, it also had considerable disadvantages. Local authorities had complete control over the day to day implementation of the 1875 Act; how they went about this was entirely dependent on the way they viewed the adulteration issue. In many cases this view was determined by the prevalence of tradesmen on these councils. Local councils also had a great desire to preserve their autonomy at all costs. In the case of adulteration this would manifest itself in the seeming inability of the LGB to make local bodies comply with certain sections of

[120] Correspondence between Admiral McHardy, Chief Constable of Essex and Inspector Hawtree, Rochford Police Station, 22 May 1873. Essex Record Office, J/P 13/1.

the 1875 Act. As Dorothy Porter has noted, 'Victorians were forced to decide whether legislation designed to protect them against themselves was tyranny or salvation'.[121] The following chapters, which discuss the more practical dimensions of the implementation of the 1875 Act, will illustrate this point. Chapters four and five will discuss the practical operation of the 1875 Act at local level. Chapter four considers the inspectorate and the process of sample collection, while chapter five considers public analysts and the evaluation of the samples collected.

[121] Dorothy Porter, 1999, p. 128.

Chapter Four

Local Implementation of the 1875 Act. Part I: Sample Collection

Numerous difficulties relating to sample collection were experienced by inspectors at the local level. Constraints such as limited manpower, anomalies in the law and the reluctance of local authorities to implement the Act fully, prevented inspectors carrying out their designated functions in an effective manner. This chapter will outline the role of the inspector and discuss the process of sample collection as intended by the legislation. It will then explore the many practical difficulties in implementing these provisions.

Inspectors Appointed under the 1875 Act

A crucial omission from the 1860 Act was the absence of any provision for the official collection of food samples. Consequently, that legislation was never likely to be effective. To remedy this, the 1872 legislation identified three categories of officials who would be permitted to perform this task when appointed by local authorities; inspectors of nuisances, inspectors of weights and measures and inspectors of markets. As noted in the previous chapter, the 1875 Sale of Food and Drugs Act identified a further two categories of local official who could be appointed to collect samples of food, drink and drugs for analysis; medical

officers of health and police officers. While a local authority was not permitted to appoint any persons other than these named officials to collect samples, inspectors appointed under the Act were themselves authorised to use deputies to obtain samples. As with previous legislation, the Act allowed private individuals to buy and submit samples for analysis.

In most authorities, the official most likely to be appointed to collect samples was either the inspector of nuisances, the inspector of weights and measures or a police officer. As noted in chapter three, police officers often performed a number of additional roles including that of weights and measures inspector and less commonly as inspector of nuisances. It was therefore quite possible for a police officer who was acting as a weights and measures inspector to be nominated as inspector to collect food samples as well, thus acting in multiple roles. Where local authorities determined that police officers should collect food samples, these officers remained accountable to their Chief Constable. How they implemented their duties in relation to the Act was therefore determined by the attitude of the Chief Constable to the adulteration issue. Inspectors who were not police officers were appointed and administered by local authorities.

With such a variety of official permitted to collect food samples, all of whom had differing backgrounds and status as well as perhaps having differing lines of accountability, there was clearly a great deal of scope for confusion in the implementation of the Act. Differences in background and interests also meant that inspectors brought to the job differences in expectation of their role as well

as variations in the methods used. As Bartrip and Fenn note in relation to the Factory Inspectorate '... there were considerable distinctions between the interests and operational methods of particular officers'. [1] This was equally true for inspectors collecting food samples, as will be shown later in this chapter.

The chief responsibility of all inspectors appointed under the 1875 Act was to collect samples from vendors and submit them to the public analyst for analysis. While police officers acting as inspectors were instructed to do this by their Chief Constable other categories of inspectors were directed to collect samples by the local authority. If the public analyst found a sample to be adulterated the Act stated that 'the person causing the analysis to be made may take proceedings...'.[2] While this permitted the inspector, or less usually a private individual, to institute proceedings against the vendor, in practice, proceedings would invariably be instituted by the local authority, unless the inspector was a police officer. In this case proceedings might be instituted by him after receiving authority to do so from his Chief Constable.

Sample Collection

The most usual reason for an inspector to visit a shopkeeper was in response to a public complaint that adulteration was suspected. This complaint might be made to the local authority or the Chief Constable. If those receiving the complaint were conscientious about implementing the Act, they would then direct

[1] P.W.J. Bartrip and P.T. Fenn, 'The Administration of Safety: The Enforcement Policy of the Early Factory Inspectorate, 1844-1864', 1980, p. 99.
[2] Sale of Food and Drugs Act, 1875, s. 20.

the appropriate inspector to investigate. While inspectors such as inspectors of nuisances had a certain amount of autonomy when acting solely in that role, when appointed as officials to collect samples under the 1875 Act it seems more likely that they, and other inspectors, had their daily activities directed by their employers the local authority, or in the case of police officers, the Chief Constable, either after a public complaint or on a random basis. If no public complaints were received, it was quite common for local bodies to assume that adulteration was not an issue and therefore no sample collection needed to be undertaken.[3]

The procedure for sample collection laid down by the Act was for the inspector to enter the shop and ask to make a purchase. Having received the requested goods the inspector was to notify the seller explicitly that it was his 'intention to have the same (that is the sample) analysed by the public analyst'.[4] The inspector was then to 'offer' to divide the sample into three portions which he would seal and number.[5] One portion was returned to the shopkeeper, while the inspector would retain the other two; one to be sent to the public analyst and the other to be kept by the inspector for any necessary future comparison. If the shopkeeper refused the inspector's 'offer' to divide the sample, then the whole sample was to be taken to the analyst who would divide it into two parts,

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[3] The response from the authorities in Suffolk illustrates this point. When in 1877 they were asked by the LGB why no samples had been collected, they replied it was not necessary as 'no complaint' of adulteration had been made. LGB Correspondence with Local Authorities, Suffolk 1872-1888, TNA, MH 30/226.

[4] Sale of Food and Drugs Act, 1875, s. 14.

[5] Dividing samples in this way was very similar to that practised by the Excise Department. In *Orders* issued by the Board of Excise in 1837, officers collecting samples of dutiable items were instructed to divide samples 'into three portions, of which one should be kept for reference and two sent to the Senior General Examiners...', Hammond and Egan, note 21, p. 313.

retaining one for analysis and returning the other to the 'purchaser', which in most cases would be the inspector.[6] If the inspector was using a deputy, this person would purchase the sample in the same way as a regular customer. Having paid for the purchase the deputy would leave the shop and hand the goods over to the inspector who would be waiting outside. The inspector would then enter the shop, announce to the shopkeeper that the goods were for analysis, and then continue with the rest of the proper procedure for sample collection.[7] The 1875 Act also stipulated that 'any purchaser' was entitled, on payment to the analyst of a sum 'not exceeding ten shillings and sixpence,' to have samples of suspect food analysed. As the private purchaser was not buying goods for *official* analysis he was not required to go through the same formalities for sample collection as the official inspector.[8]

Inspectors were given little in the way of instruction as to how they should perform this role. In 1882 some guidelines on the 'manner' in which inspectors should conduct themselves were provided by Alexander Wynter Blyth, Public Analyst for the County of Devon and Medical Officer of Health and Public Analyst for St. Marylebone:

> The purchase of samples need not be effected in an officious manner, nor is it just, for example, to enter a shop when full of people, and with ostentation buy and divide the sample before the customers, for an injury

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[6] Sale of Food and Drugs Act, 1875, s. 15.
[7] Bell, Scrivener and Lloyd, p. 45.
[8] Sale of Food and Drugs Act, 1875, s. 12, s. 14. When cases came to court this proved to be a very disputed aspect of the Act. Bell, Scrivener and Lloyd, pp. 43 - 51.

> may thus be done to an honest tradesman; the people in the shop might naturally think, in such a case, that the tradesman's goods were 'things suspect'. There are indeed always two ways of doing a thing, and a little politeness and civility will in no way interfere with the execution of duty, or the carrying out of the Act.[9]

After collection the food sample had to be transmitted by the inspector to the public analyst. Many analysts covered extensive geographical areas and most were based in large towns or cities. Because of this, the local inspector was often faced with the problem of transporting samples to an analyst who might be based many miles away. In an attempt to overcome this difficulty, the 1875 Act made provision for sending samples through the post if the analyst lived more than two miles away.[10] In 1875, the LGB sent a circular to all local authorities giving detailed instructions from the Postmaster-General on the transmission of postal samples. The regulations required that liquids for analysis be contained in 'stout bottles' enclosed in 'strong wooden boxes with rounded edges', covered by 'stout wrappers of paper or cloth'. Packages were not to exceed 8 inches in length, 4 inches in width and 3 inches in depth. No package submitted to the analyst was to exceed the dimensions of 18 inches in length, 9 inches in width, or 6 inches in depth. Any postmaster who was not satisfied that samples had

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[9] Although these instructions only extended to two pages in a volume of nearly 600 pages, such a detailed outline of the sample collection procedure was unusual. However, as this book was intended for use by analytical chemists it is debatable if many inspectors would have seen these instructions. Alexander Wynter Blyth, *Foods,* 1882, pp. 62 - 63.

[10] Sale of Food and Drugs Act 1875, s.16.

been packed according to these requirements was permitted to refuse to accept the package.[11]

Practical Difficulties with Sample Collection

While the procedure for sample collection as stipulated by the Act thus appears to have been straightforward, many practical difficulties soon became apparent. In many cases the whole process of sample collection was invalidated because inspectors were recognised. At other times inspectors, who lacked any official training, made mistakes in the sample collection process or kept samples too long before submission to the analyst. As a result many samples decomposed and were unsuitable for analysis.

Recognition of Inspectors

The principal constraint to effective and reliable sample collection was that inspectors were easily recognised. This weakness in the sample collection process has been identified by Jim Phillips and Michael French who note that because of this, traders 'frequently supplied officials with different items from those which regular customers received' and this has to be taken into account when 'assessing adulteration's "true" level'.[12] How some local authorities tried to address this problem will be discussed later in this chapter.

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[11] *Fifth Annual Report of the Local Government Board,* 1875-1876, (C.1585) XXXI, Appendix A, p. 91.
[12] Jim Phillips and Michael French, 'Adulteration and Food Law, 1899-1939', 1998, p. 352.

Many local officials involved with sample collection remained in office for years and it must have been quite obvious to any shopkeeper who they were. The problem of recognition was perhaps greater in small rural communities where residents knew exactly who was their local official. This difficulty was far less likely to occur with central government inspectors who often operated well away from their home area. Also, in most cases it was not essential that these inspectors went unrecognised and many would make specific appointments for their visits. For the collection of food samples however, it was essential that inspectors not be recognised in order for them to receive samples that were truly representative of those sold to the general public. Even more obviously, police officers and other inspectors usually collected samples while wearing uniform and were thus readily identifiable. This aspect of sample collection, frequently mention by *The Analyst* , was still causing problems in 1893:

> If a tall police–sergeant went into a country village shop and asked for a pennyworth of mustard — which was not a very usual occurrence in the ordinary course of business — then, of course, the dealer was forewarned, and he took uncommonly good care to supply him with the genuine article.[13]

The LGB acknowledged this problem and agreed that low figures for adulteration reported in some areas had more to do with inspectors being recognised than

[13] Otto Hehner, 'Proceedings of the Society of Public Analysts', *The Analyst,* (Supplement) **18**, April 1893, pp. 97-116, p. 105.

any improvement in food quality.[14] Once an inspector was identified, it was unlikely he would knowingly be given adulterated goods. During the hearings of the Select Committee on Adulteration of Food (1856) it had been acknowledged that because of this it was quite likely that retailers might keep two qualities of goods, one for the public and one for the inspector.[15] Being able to recognise the inspector also led to the bizarre situation whereby traders, in their haste to give pure samples to an inspector, supplied goods in excess of the genuine. In Liverpool in 1887, two samples of milk were found to be half cream, while in two other cases the inspector who requested milk was supplied with pure cream.[16]

The Use of Deputies

In an effort to overcome the problem of inspectors being recognised, some areas brought in inspectors from outside. In other districts, inspectors resorted to wearing disguises to conceal their identity, while in yet others, deputies were used to purchase samples. Often these deputies would be members of the inspector's own family.[17] The use of female members of the family to undertake this role was not uncommon and it seems that gender was an important factor when it came to procuring certain items of food and drink. This was illustrated later in the century in Lieutenant-Colonel Hayward's evidence to the Select Committee on Food Products Adulteration in 1894. As Treasurer of the Dairy

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[14] *Twelfth Annual Report of the Local Government Board,* 1882-1883, (C. 3778) XXVIII.
[15] *Select Committee on Adulteration of Food*, 1856, (379) VIII, Qs. 2474, 2475 evidence of William Carpenter.
[16] *Sixteenth Annual Report of the Local Government Board*, 1886-1887, (C. 5131) XXXVI.
[17] Evidence of Herbert Preston-Thomas, *Select Committee on Food Products Adulteration* 1895, (363) X, Q. 274.

Produce Defence Association, he argued that the use of women to collect samples resulted in a more reliable assessment of adulteration levels. The Association had been set up in 1892 to try to estimate the true extent of milk and butter adulteration in Cheltenham and Gloucester. Although short-lived, the Association did manage to organise the collection of butter samples in both towns and their investigations revealed that adulteration was far higher than official estimates. What was particularly important about these findings was that women had been employed by the Association to collect the samples because the 'suspicions of fraudulent traders were lulled when a woman appeared'. As Hayward observed, it was little use sending in a man to buy butter as the vendor would at once become suspicious. Similarly a woman buying whisky would arouse suspicion.[18]

The use of deputies, including women, to collect samples appears to be an important, if little-known, aspect of sample collection. While there are no available figures to indicate how many inspectors used deputies, it would seem reasonable to assume that many did not. In these cases an inspector being recognised either by his uniform, or because he was buying an item normally purchased by a woman, leads to the conclusion that many inspectors were being given samples of food, drink and drugs that were not representative of products sold to the general public.

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[18] Evidence of Lieutenant-Colonel J.F.C. Hayward, *Select Committee on Food Products Adulteration* 1894, (253) XII, Qs. 981-1033.

The issue of inspectors being recognised was not a new problem, having been raised by the Anti-Adulteration Association following the introduction of the 1872 Adulteration Act. This organisation, discussed in chapter two, proposed to overcome the problem by using its own agents to buy samples of food and test them in the Association's own laboratory. If this analysis proved the goods to be adulterated, a second sample would be purchased and handed to the appropriate food inspector. If the public analyst confirmed the adulteration then the Association was prepared to allow its earlier evidence to be used in court and pay the prosecution's legal costs.[19]

In 1883, in an effort to control adulteration more effectively and overcome the problem of inspectors being recognised the County of Middlesex set up a Special Committee. Four officials, who were also inspectors of weights and measures, were each allocated an area in which to collect samples. Each member of the Special Committee was then assigned to one of the four areas covered by these inspectors, instructed to observe them in their work and report on progress.[20] To assist inspectors detecting drug adulteration, the county analyst supplied them with a list of drugs commonly adulterated. To prevent inspectors from being recognised, the county authorities authorised them to use an assistant and a witness for a period of six months with costs payable by the county. Inspectors were to be paid £20 per year and 10 shillings upon each conviction. This extra payment would cease in 1896 when inspectors in Middlesex were paid entirely

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[19] *The Anti-Adulteration Review,* **15**, 15 January 1873, p. 9.

[20] Archive records at LMA do not indicate exactly how traders were targeted for sample collection but as Special Committee members were allocated to oversee individual inspectors it is possible that they had some influence on this process.

by salary.[21] Appreciating that inspectors could be at a disadvantage in court when cross-examined by hostile lawyers, the Special Committee also recommended that inspectors be authorised to obtain the services of a lawyer when prosecutions occurred. The Committee hoped that these actions would encourage inspectors to 'submit a greater number of articles for analysis than heretofore and generally display greater activity in performing their duties under these acts'.[22]

While financial constraints may have deterred other authorities from pursuing a similar policy, Middlesex was able to show that the extra expense was justified as the amount taken in fines more than doubled. Setting up a Special Committee seemed to be beneficial as percentage figures for adulteration in Middlesex for a twenty-year period after the introduction of the 1875 Act, remained consistently lower than the average for the rest of the country.[23] However, while these figures look encouraging they may not be an accurate reflection of food quality. As will be shown later in this chapter, giving local councils such complete control over all aspects of the collection process, often meant that the 1875 Act was not implemented in the most effective manner.

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[21] Report of the General Purposes Committee, LMA, *County Council of Middlesex Reports*, 1897, vol. 2. Appendix IV, p. 25.

[22] 'Remuneration of Inspectors', Report of the Special Committee Appointed to Superintend the Adulteration Acts, Middlesex, November (adjourned session), 1883, LMA, MA/RS/2/25.

[23] In 1883 the total costs of assistants and witnesses amounted to £20 3s 0d, of which £6 6s 0d. was for legal assistance while fines payable to the county in the same year amounted to £117 12s 6d. Fines for the previous period, before assistants had been used, only amounted to £53 5s 6d., LMA, MA/RS/1/13 July 1884, MA/RS/2/25, MA/RS/2/27, MA/RS/1/14.

Informal Sampling

Concern over the problem of inspectors being recognised was the main impetus behind the introduction of a practice called informal sampling in the early 1900s. This procedure allowed the inspector to purchase goods for analysis without informing the shopkeeper of his intention. However, when samples were gathered in this way and adulteration found, legal proceedings could not be instituted as the prescribed formalities at the time of purchase had not been followed. The process really served as a method of identifying traders who were selling adulterated goods who could then be targeted by official inspectors. In 1932 a former public analyst to the city of Birmingham, J.F. Liverseege, reviewing sample collection and analysis in the city over a fifty year period, noted that with such a system the buyers 'not being burdened with unfamiliar responsibilities, make the purchase in a natural manner'. He also made another pertinent observation. While noting that this method was likely to increase the chances of 'detecting habitual fraud', informal sampling was also less likely to incriminate innocent traders. His rationale was similar to that of Alexander Blyth in the 1880s, quoted above. In the course of a formal sampling procedure, the inspector took up 'time and counter space for the division of samples and the sealing of packets'. This quite naturally tended to excite the curiosity and suspicion of other customers in the shop who might well assume there was some real justification for the inspector's visit.[24] Figures from the city of Birmingham confirmed that informal sampling was an efficient method of detecting

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[24] J.F. Liverseege, *Adulteration and Analysis of Food and Drugs*, 1932, p.12.

adulteration. In 1906, percentage levels for butter adulteration were 14 per cent. Following the introduction of informal sampling percentage levels for adulteration fell to 7 per cent, 6.5 per cent and 6.2 per cent in successive years.[25]

In 1906 the LGB reported that informal sampling was 'largely employed' and 'in some districts a large proportion of samples have been taken in this manner'. [26] While the Board gave overall figures for the collection of informal samples and adulterations found, no detailed breakdown of figures was given. In 1914, the LGB considered that this method of sample collection 'has many advantages', although the figures were not always unambiguous. In some cases official figures for informal sampling do not confirm expected higher rates of adulteration. In the Annual Report of 1914 the Board noted that 26,667 samples were purchased informally of which 1,839 were 'condemned'. However, this gives a percentage rate for adulteration of 6.9 per cent which is unexpectedly lower than the overall adulteration rate of 8.2 per cent.[27] My analysis of nineteenth-century figures and methods used in their composition indicates that some caution be used when taking these figures to be an accurate reflection of adulteration rates. Basing their analysis on samples collected in Edwardian Scotland, French and Phillips comment that in areas where figures for the two methods of sampling were published separately, samples obtained 'informally' always showed a higher rate of adulteration than those obtained in a 'formal'

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[25] Liverseege, p.12.
[26] *Thirty-sixth Annual Report of the Local Government Board,* 1906-1907, (Cd. 3665) XXVI. p. xcix.
[27] *Forty-third Annual Report of the Local Government Board*, 1914, (Cd. 7611) XXXVIII, p. clxvii.

manner.[28] As these authors also note, when attempting to make some assessment about 'true' levels of adulteration, informal sampling was undertaken in instances where traders were suspected of supplying inspectors with samples not truly representative of those sold to ordinary customers. As a result 'adulteration was probably below the informal figure, but above the formal figure'.[29]

Training for Inspectors

The second practical constraint on sample collection was that inspectors received little, if any, training in how the procedure was to be carried out. The procedure for sample collection laid down by the 1875 Act was very precise. It was essential that all aspects were strictly adhered to or the whole collection process could be declared invalid. With little or no training in this aspect, it was easy for inspectors to make mistakes. As a result, when traders were prosecuted for adulteration offences, defence solicitors often attempted to have defendants acquitted by arguing over certain aspects of the sample collection procedure and whether these had been correctly adhered to. In 1878, *The Analyst* noted that 'more than half of the adulteration prosecutions are defended simply on technical quibbles', and many of these concerned the procedure for sample collection.[30] The technical quibbles took many forms. It might have been that the sample,

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[28] Michael French and Jim Phillips confirm that in Scotland there was a substantial difference in adulteration levels between 'formal' and 'informal' sampling. They present figures to show that in 1904, 9 per cent of 'formal' samples were adulterated while 20.3 per cent of 'informal' samples were adulterated. *Cheated not poisoned?,* 2000, p. 53.

[29] French and Phillips, 2002, p.16. In correspondence with Jim Phillips I attempted to clarify this issue more fully. He confirmed that informal sampling was sometimes used to detect abuse of a particular product, notably milk or butter, as a means of exerting pressure on a particular retailer.

[30] *The Analyst,* 1878, **3,** (29), p. 301.

after being divided, was not properly sealed or the prescribed words had not been recited by the inspector. For example, in 1878 a police constable purchasing half a pint of gin told the seller that he purchased it for 'analysis' but did not add 'by the public analyst'. As a result, the seller claimed he had not known it was for official analysis, and the case was dropped.[31] Another case concerning this aspect of sample collection illustrates how traders would latch onto seemingly trivial aspects of this procedure in order to avoid conviction. In 1887, a publican was informed by the inspector that the sample he had purchased was for analysis by the 'county analyst'. The case went to appeal where it was upheld that the notice to the publican was sufficient, although the words 'public analyst' were not expressly used.[32] The LGB frequently sent circulars to local authorities on many aspects of the Act, including procedures for sample collection, but it was the responsibility of local bodies to pass these on to inspectors. Clearly, where councils were ambivalent about the adulteration issue or dominated by trade interests, this was less likely to happen.

With no central directives and little in the way of organisation or training, most inspectors nominated under the 1875 Act had to determine their own role. Occasionally, in an effort to aid the inspector, local authorities would try to clarify the procedure for sample collection. For example, in 1884, the county of Dorset produced a booklet outlining the very detailed procedures to be followed when

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[31] Bell, Scrivener and Lloyd, p. 50.

[32] B. Scott Elder, (Chief Inspector of Food and Drugs and Weights and Measures for the county of Durham) compiled a collection of appeal cases published as *Appeal Cases under the Sale of Food and Drugs Acts,1875, 1879 and 1899 and the Margarine Act 1887,* 1905, Whecker v Webb (1887), p. 24

samples were collected.[33] In the 1870s, the Public Analyst for the county of Cheshire, J.Carter Bell, initiated the practice of visiting country districts to supervise and instruct inspectors on how to take samples of milk and other articles of food.[34] However, this was unusual and sample collection at this time remained an area fraught with problems for the inexperienced inspector.

The division of a sample into three portions on the shopkeeper's premises with one portion to be retained by him, was a new requirement in the 1875 Act. Previously, samples collected by inspectors were taken to the analyst where they were divided into two, one portion for the analyst and one for the inspector. While members of the trade felt the new arrangement was an improvement on previous measures because it offered them more protection, other groups were not convinced that the changes were beneficial.[35] The SPA in particular expressed concern. They felt that with the new system there was an opportunity, not only for a guilty trader to substitute samples but also, for collusion between the shopkeeper and the inspector. Most analysts wanted a system whereby one portion was left with the vendor and the remainder taken to the analyst and divided there.[36]

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[33] This booklet simply outlined the procedure for sample collection as contained in the Act. LGB Correspondence with Local Authorities, Dorset 1883-1888, TNA, MH 30/61.
[34] LGB Correspondence with Local Authorities, Chester, 1872-1882, TNA, MH 30/29.
[35] In 1875 an editorial in *The Grocer* reacted favourably to this new arrangement and considered that the trade had been given 'more power' by being able to retain one portion of the sample. *The Grocer,* **28**, July-December 1875, p. 152.
[36] *Proceedings of the Society of Public Analysts*, **1**, 1876.

Limited Manpower

While the efficiency of sample collection depended a great deal on the numbers of inspectors nominated to perform this task, lack of manpower meant that many inspectors were expected to cover large geographical areas. The large districts covered by inspectors made it difficult for them to make other than infrequent visits to shopkeepers. In1883, nineteen inspectors covered the entire county of Essex which at this time had a population of 576,434.[37] In 1894, one county analyst noted that it would take his inspectors 66 years to make a single round of dealers.[38] Even in areas closer to London, inspectors were expected to cover extensive areas. In 1883 just four inspectors were expected to cover the entire county of Middlesex.[39]

Postal Samples

Another practical difficulty concerned the transmission of samples through the post. Apart from obvious hazards such as items breaking, this was not an ideal way to transmit perishable samples and there were many examples of an analyst receiving samples of food and drink that had decomposed. As a result, the value of any analysis after samples had arrived in this condition has to be questioned. There are frequent references to the problems associated with postal samples in the records of the Excise Chemists. On arrival at Somerset House, samples

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[37] *Nineteenth Annual Report of the Local Government Board,* 1989-90, (C. 6141) XXXIII, Population figures for 1881.
[38] *Twenty-third Annual Report of the Local Government Board,* 1893-1894, (C. 7500) XXXVIII.
[39] Middlesex Miscellaneous Reports 1883, LMA, MA/RS/2/25.

were often in an advanced state of decomposition; bottles of milk, for example, frequently burst as a result. When making their analysis the Excise Chemists would often 'make allowances' for decomposition.[40] Recognising the potential hazards involved, the Post Office later stated that packets insecurely packed would be destroyed and the senders liable to prosecution under the Post Office (Protection) Act 1884.[41]

While postal samples often arrived in an advanced state of decomposition, other perishable samples were also liable to decompose if kept too long before analysis. Many samples were stored in unsuitable places such as police stations and often remained there for a considerable time before analysis. In an effort to overcome this problem, together with that of analysts taking too long to report on samples, the Sale of Food and Drugs Act Amendment Act, 1879 would later require that a summons be served within 'a reasonable time'. In the case of perishable samples this was to be no later than twenty-eight days from the time of purchase.[42]

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[40] *The Free Press*, report of disputed analysis at West Bromwich, 24 June 1876, TNA, DSIR 26/118.
[41] Bell, Scrivener and Lloyd, p. 55.
[42] The Sale of Food and Drugs Act Amendment Act, 1879, (42 & 43 Vict. c. 30), s. 10. The Act also introduced a minimum strength for alcoholic spirits and permitted samples of milk to be taken from street vendors.

Ambiguous Lines of Authority

a) *The Chief Constable*

As noted earlier, sample collection could be undertaken either by inspectors directly responsible to their local authority or, in the case of police officers, responsible to their Chief Constable. This division of responsibility made for great countrywide variations in rates of sample collection and was an important practical constraint on the effective implementation of the Act at local level. Where the Chief Constable was in charge, it was his attitude towards the adulteration issue that determined whether samples of food and drink would be collected. For many Chief Constables, sample collection was an unpopular additional burden and they often demonstrated their dislike of the task by neglecting to direct their officers to collect samples. For example, in the county of Suffolk the Chief Constable was very opposed to his officers acting in this role and during 1882 no samples at all were collected. In the following year, just four samples were submitted for analysis and in 1886 only six.[43] Similarly, in the county of Oxford the Chief Constable was also opposed to the idea of his men collecting samples. As a result Oxford was one of the most consistently lax authorities in this respect, despite its appointment in 1872 of twelve inspectors, all police officers, to perform this task. No samples at all were obtained until 1877 when fifty were submitted in the last quarter of the year. The LGB wrote numerous letters to the county authority requesting an explanation from the Chief

[43] LGB Correspondence with Local Authorities, Suffolk, 1872-1888, TNA, MH 30/226.

Constable as to why no samples had been collected. The Board eventually received a reply stating that, as far as collecting samples was concerned, the Chief Constable saw 'no reasonable cause to do so'. The collection of samples within the County remained poor until 1894 when an increase did occur.[44]

Not all Chief Constables were opposed to their officers being involved in sample collection. In Chester the Public Analyst, J. Carter Bell, praised the Chief Constable on a number of occasions for his pro-active approach to the adulteration issue. In 1878, Bell noted that since the appointment of Captain Arrowsmith as Chief Constable and the systematic collection of samples, the adulteration of beer had declined. In 1879, Bell was even more generous in his praise, commending the Chief Constable for carrying out the Act 'most zealously' and noting that since the Chief Constable had requested that milk samples be taken in every division of the county, the quality of milk 'has been excellent'.[45] As noted earlier, this improvement may have been assisted by Bell himself who visited country areas to supervise inspectors when taking food samples.[46] In direct contrast, inspectors in other areas received little or no training on the correct procedure for taking samples. In Chester such an enthusiastic approach to the adulteration issue on the part of the Chief Constable was beneficial. By

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[44] LGB Correspondence with Local Authorities, Oxford, 1872-1882, 1889-1892, 1893-1898, TNA, MH 30/203, MH 30/204, MH 30/205.
[45] LGB Correspondence with Local Authorities, Chester, 1872-1882, Report 1879, TNA, MH 30/29.
[46] Chester, 1872-1882, TNA, MH 30/29.

1883 the number of samples examined annually was substantially higher than in other parts of the country.[47]

The LGB communicated frequently with errant authorities on the appointment of inspectors and the issue of sample collection, but as with appointment of public analysts, the Board lacked the legislative powers to enforce compliance. Often the Board communicated directly with the Chief Constable and in some cases sample collection increased as a result, if only for a limited period. For example, in Salop in 1882, after a number of circulars expressing concern at the lack of samples, the Board instructed the Chief Constable to collect two samples for analysis in each of the six police divisions. The Chief Constable appears to have made a token gesture to comply with this request as thirteen samples were analysed that year, but by 1884 once again no samples were collected.[48]

b) *The Local Authority*

The way local authorities saw their role in relation to the 1875 Act also had a very marked effect on sample collection. The reluctance of some authorities to appoint inspectors for this role was a key reason why the Act was not successful in so many areas. Often this reluctance was because trade members dominated local councils. Because of this there was often concern among council members that the appointment of inspectors might interfere with normal trading practices

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[47] The 1883-1884 Annual Report of the LGB shows that with 806 samples submitted for analysis during the year only two other county authorities in England out of a total of 42, had sample figures higher than Chester. *Thirteenth Annual Report of the Local Government Board*, 1883-1884, (C. 4166) XXXVII.

[48] LGB Correspondence with Local Authorities, Salop, 1881-1888, TNA, MH 30/211.

as well as other, less legitimate, activities. At other times local authorities seemed unclear about their role in the appointment of inspectors. With local boards of health, rural sanitary authorities and unions within these areas, each responsible for deciding if an inspector was really necessary, it is not too surprising that confusion existed. Even in areas where local authorities agreed that sample collection should be undertaken, there was often a great deal of debate as to which category of official should be appointed. In many cases this led to protracted deliberations among local board members. Many of these deliberations took months, in some cases years. In the case of Dorset, the LGB was in communication with the county authority for six years before the issue of inspection was resolved.[49] An example of such administrative deliberations can be seen in the records for the county of Devon. In 1884, the LGB sent a circular to all local bodies within the county of Devon urging those that had not appointed inspectors to do so as soon as possible. Eight local boards within the county replied to this circular, all of them nominating different officials, or combinations of official, who would collect samples.[50]

Some authorities declined to appoint food inspectors or collect samples, fearing their reputation would suffer if they were identified as an area where food was impure. This was particularly true in places such as spa towns where a considerable proportion of income was generated from visitors.[51] Other local authorities assumed that because there were no complaints, adulteration did not exist. Wanstead Local Board was typical in this respect. In 1884 in response to a

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[49] Dorset, 1872-1882, TNA, MH 30/60.
[50] Devon, 1883-1888, TNA, MH 30/55.
[51] *Select Committee on Food Products Adulteration*, 1896, (288) IX, Q. 925.

circular sent by the LGB, the Wanstead Local Board, who up to now had not submitted any samples, replied saying they were not sure who should collect samples, but in any case all traders in the area were 'old established' and therefore there was no reason to suspect adulteration. They added that samples would be collected from 'time to time' but would not be submitted for analysis unless there were grounds for suspecting adulteration.[52]

While the establishment of Special Committees, such as the one set up in Middlesex in 1883, appeared to have some positive effects and may well have improved the level of sample collection, it also had disadvantages. Of most concern was the amount of control these committees exerted over all aspects of the regulatory process. As an example, in 1883 the Special Committee in Middlesex agreed that inspectors would be allowed to charge to the Committee the cost of the article purchased for analysis. However, in cases where the article exceeded 2s 6d the inspector was to 'obtain an order in writing signed by a Justice of the Peace previously to procuring such article'.[53] Such a condition would of course restrict any spontaneous purchasing of samples. Not only did inspectors receive instructions as to where and from whom they were to collect samples, but it was also common knowledge among committee members on which days these purchases would be made.[54] As early as 1876, *The Analyst* was voicing concern on this issue. Referring to Vestry and District Boards the

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[52] Letter to the LGB from Wanstead Local Board, 30 June 1884, LGB Correspondence with Local Authorities, Essex, 1883-1888, TNA, MH 30/74.
[53] 'Remuneration of Inspectors', Report of the Special Committee Appointed to Superintend the Administration of the Adulteration Acts, Middlesex, November 1883, LMA, MA/RS/2/25.
[54] Evidence of George Embrey, Public Analyst for the county and city of Gloucester, *Select Committee on Food Products Adulteration*, 1894, (253) XII, Q. 1474. Evidence of William Grigg, Sanitary Inspector, *Select Committee on Food Products Adulteration*, 1896, (288) IX, Q. 1119.

journal noted how difficult it was to get 'representative samples' because of the 'jealousy' of these Boards about any samples being collected 'without their express order'. The journal then continued:

> At a meeting of the Board a resolution is passed that "the Inspector be ordered to procure so many samples of such an article, and submit them to the Analyst". This is published in the local paper next morning, and it is not surprising that after this kindly warning only pure samples of the article in question are sold in the district (except by accident) ...[55]

The predominance of trade interests on local councils was also important when it came to the prosecution of adulteration offenders. As noted previously, the 1875 Act stated that the person who had collected the sample was permitted to take proceedings. Although this meant that the inspector could start this process, in practice this was very unlikely to happen. As one witness to the 1874 Select Committee noted, while inspectors were officially permitted to institute proceedings 'some local authorities will not allow it'.[56] In most cases the final decision on whether to start proceedings would have been taken by a Special Committee, where one existed, by the Chief Constable or by the sanitary committee of the local authority. Clearly, where councils were composed largely of shopkeepers, trading interests may well have influenced these decisions.

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[55] 'The Public, and "Public Analysts" ',*The Analyst*, **1**, (9), 1876, p. 156.
[56] Evidence of Charles Tidy, *Select Committee on Adulteration of Food Act, (1872)*, 1874, (262) VI, Q. 5464.

The Public and Sample Collection

Another important aspect of the sample collection process concerned the role of the public. While the 1875 Act permitted 'any purchaser' on payment to the analyst of not more than ten shillings and sixpence to have suspect samples analysed, few members of the public took advantage of this opportunity. There were several reasons for this reluctance. Firstly, it is possible that the public were generally unaware that this facility existed, although in some areas notification of the appointment of a public analyst together with the provisions of the 1875 Act were published in local newspapers. There was also the obvious problem of cost. The fee of up to ten shillings and sixpence for each analysis was a considerable sum that would certainly have excluded many poorer members of the community. In certain areas, there was an attempt to address this particular problem. In 1880, the town council of Bristol reduced the fee to two shillings and sixpence; Salford and Brighton soon followed this example. Such a move was obviously successful as two years later the LGB reported that, of the 429 private samples submitted for analysis during the year, 242 had come from these three areas alone.[57] Another limitation on private sample collection was that shopkeepers could refuse to sell a sample to the private purchaser without risk of a fine, whereas if an inspector was refused a sample by a retailer, the retailer was liable to a fine of up to £10.[58]

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[57] *Tenth Annual Report of the Local Government Board,* 1880-1881, (C. 2982) XLVI, p. lxxxvii. *Twelfth Annual Report of the Local Government Board,* 1882-1883, (C. 3778) XXVIII, p. cxiii.
[58] Sale of Food and Drugs Act, 1875, s.17.

Some local bodies also seemed to make the whole process of sample collection and analysis unnecessarily complicated, especially for the private purchaser. In Norfolk, instead of a single payment of up to ten shillings and sixpence for a sample to be analysed, articles were grouped into three categories and charged at different rates. For example, if a purchaser wished to have a sample analysed in a group which included bread, flour, ale, wines or drugs, the charge would be ten shillings and sixpence. If he wished to have a sample analysed in another group, such as milk, tea, coffee or chocolate, the charge would be five shillings. Items of food and drink outside either of these categories were charged at two shillings and sixpence per analysis. While it was not uncommon for local authorities to pay the analyst variable rates for analysing different items, and this was the case in Norfolk, it was unusual for the private purchaser to have to pay a variable charge depending on the item submitted for analysis.[59]

Assaults on Inspectors

The role of sample collection was not popular among inspectors as many suffered physical and verbal abuse while trying to perform their duty. In his instructions for inspectors of 1882, Alexander Blyth recommended calm in such circumstances. An inspector might be 'abused occasionally in no measured terms...' but should 'endeavour to keep his temper...and not to retort in any way'.[60] Although the 1875 Act stipulated a fine of up to £10 for refusing to serve an inspector, this was no deterrent to many shopkeepers and inspectors often

[59] Norfolk County Register Correspondence, 1872-1888, TNA, MH 30/185.
[60] Blyth, 1882, p. 63.

had a difficult task trying to obtain samples from reluctant traders. Frequently an assistant, or the shopkeeper's wife, sold the questionable sample. The shopkeeper, who was often just out at the back, realising his assistant had made a blunder, would attempt to rescue the sample and scuffles often ensued. This was the case in 1877 when William Neale, a Woolwich chemist, was summonsed for assaulting the local inspector, John Carty. The inspector said he had gone into the defendant's shop and asked a young man behind the counter if he sold castor oil lozenges. He replied that he did and the inspector asked for a dozen which were supplied at a charge of 9d. The inspector then announced that he had bought the lozenges for analysis, whereupon the young man called the defendant, 'who tried to gain repossession of the lozenges, saying they did not contain castor oil, and that they were not the article required'. The inspector offered to divide the lozenges so the chemist could retain a sample, but the chemist got very excited catching hold of the inspector's coat, raising a chair and kicking him as he left the shop. The chemist denied the charge and his statement was corroborated by his assistant. The magistrate said he believed the inspector's statement, but the assault 'was not a serious one' so he fined the defendant only five shillings and costs.[61]

The previous year this inspector was also involved in an incident which demonstrated how some shopkeepers, especially milk-sellers, flouted the law despite the threat of prosecution. In 1876 Henry White a dairyman, was

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[61] *The Analyst*, 1877, **1** (12), p. 217. In an attempt to address the issue of inspectors being assaulted the Sale of Food and Drugs Act, 1899, s.16, introduced fines for 'any person who wilfully obstructs or impedes any inspector...'. For a first offence the fine was 'not exceeding twenty pounds'. For a second offence this was increased to a fine 'not exceeding fifty pounds' and for subsequent offences a fine 'not exceeding one hundred pounds'.

summonsed for refusing to sell John Carty, the inspector, a sample of milk for analysis. When the inspector called at the shop he had asked for a pint of milk and offered 3d and a jug. The defendant said he had 'no milk' despite the fact that the inspector saw a can full of milk on the counter. Carty told the defendant he was liable to be fined £10 but the defendant said, 'I don't care; I shall not serve you'. The defendant said that he had told the inspector that 'the milk in the can was ordered by customers'. The dairyman was eventually fined 10s and costs.[62]

When an inspector used a deputy, such as a friend or relative to purchase samples, this ploy would often enrage the shopkeeper. In one case an inspector sent his son in to purchase milk. After the purchase, the inspector walked in to say the sample was for analysis. The female shopkeeper, 'knew it was wrong' and 'begged' the inspector to return the milk. When this was not forthcoming, she tried to upset the milk and then struck the inspector on the head and face before kicking him. She was fined £5 for the adulteration and 20s for assaulting an inspector.[63]

With such low fines imposed these cases clearly illustrate that magistrates showed a lenient attitude towards adulteration offenders. As will be shown in the following chapter, the general unwillingness on the part of magistrates to impose substantial fines for adulteration offences, or for offences associated with

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[62] *The Analyst,* 1876, **1,** (3), p. 55.
[63] *The Analyst*, 1878, **3**, (31), p. 351. Although fines for assaulting an inspector were not introduced until the Sale of Food and Drugs Act, 1899, in this 1878 case it is quite possible the inspector was a police officer and the defendant charged with assaulting him.

assaults on inspectors, was a considerable obstacle to the control of adulteration.

Milk Samples

Taking samples of milk involved special difficulties for inspectors. Declining numbers of town cow-keepers, the result of increasing sanitary restrictions, together with the expansion of the railway network from the 1840s, meant that milk in the course of delivery to the customer travelled over greater distances and was handled by many different people. As the distances increased, and more and more middlemen became involved in the process, there were far more opportunities for adulteration. As the numbers of dealers increased, the chances that illicit activities would be discovered diminished. All along the chain of supply, there were opportunities for the adulteration of milk by the removal of cream or the addition of water.[64] On many occasions, milkmen would indulge in both practices. The addition of water to milk, or 'bobbing', was so common that 'Bob' became the accepted synonym for a milkman.[65] The Sale of Food and Drugs Act Amendment Act of 1879 attempted to address this problem by allowing inspectors to '...procure at the place of delivery any sample of milk in course of delivery to the purchaser or consignee...'.[66] However, while this allowed for samples of milk to be taken at places such as railway stations, it was clear from the numerous appeals following prosecutions under this section that what

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[64] P.J. Atkins, 'Sophistication detected: or, the adulteration of the milk supply, 1850-1914', *Social History*, **16**, October 1991, pp. 317-339.
[65] *The Milk Journal*, **5**, May 1871, p. 88.
[66] Sale of Food and Drugs Act Amendment Act, 1879, (42 & 43 Vict. c. 30), s. 3.

constituted 'the place' or 'course of delivery' was open to question. As a result, many of those suspected of adulterating milk were acquitted on technicalities.

When collecting samples of milk that were in transit, it was not necessary for the inspector to notify the vendor that the sample was needed for analysis. In many cases this would not have been possible anyway as the sample might be taken many miles from where the milk had been supplied. Again this aspect of the 1879 Act caused many difficulties as a case referred to the appeal court illustrates. In 1880, an inspector at Euston railway station had asked a porter to get him a sample of milk while it was being unloaded from the train. The porter retained one third of the sample, the inspector the other third while the remaining third was sent for analysis. The magistrates dismissed the summons as the porter was not the seller or his agent. On appeal, this decision was overturned and it was confirmed that it was not necessary for officers procuring samples of milk in the course of delivery, to notify either the seller or his agent that the sample was for analysis.[67] Following the Amendment Act, of 1879, it was also possible for inspectors to take samples from milkmen selling in the street or market. Previously this had only been permitted if the milk was on its way to a customer. As a great deal of milk was sold by itinerant dealers this was an important amendment.[68]

While some inspectors seemed very lax about the whole sample-taking procedure, others appear to have been particularly conscientious. As noted

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[67] B. Scott Elder, Rouch v Hall, (1880) p.1.
[68] Bell, Scrivener and Lloyd, pp. 9 - 29. Bartley, pp. 48 - 62. Sale of Food and Drugs Act Amendment Act, 1879, s. 5.

earlier, the background of inspectors and their attitude to the role of sample collection, as well as that of their superiors, undoubtedly had some effect on how this role was implemented. In Salford, the inspector seems to have been very conscientious; when samples of milk were found to be adulterated, he would take further samples from both the wholesale dealer and the farmer in an attempt to establish exactly where the adulteration had occurred. At the farm, the inspector would then make a point of seeing the cows milked. This inspector also found that milk adulteration varied according to the day of the week. Samples taken on a Sunday, when the milkmen thought he would be in church, contained as much as 35 per cent water.[69] Sunday seemed to be the preferred day for milk adulteration, not only because the inspector might be in church but also, as the LGB noted, it was the day the poorer classes made rice pudding and therefore the demand for milk was higher. According to the LGB Report for 1893-1894 in Liverpool 'about' 13 per cent of milk samples taken during the week were adulterated. On Sundays this figure rose to 'about' 30 per cent.[70]

Anomalies and Omissions in the 1875 Act

A number of anomalies and omissions in the 1875 Act created particular problems for the inspector, especially when adulteration cases came to court. One of the most difficult and confusing areas concerned the issue of 'prejudice'. On prejudice the 1875 Act stated:

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[69] *Ninth Annual Report of the Local Government Board,* 1879-1880, (C. 2681) XXVI, p.cxii.
[70] *Twenty-third Annual Report of the Local Government Board* 1893-1894, (C. 7500) XXXVIII.

> No person shall sell to the prejudice of the purchaser any article of food or any drug which is not of the nature, substance, and quality of the article demanded by such purchaser...[71]

'Prejudice' occurred when a purchaser paid for one thing and received another of inferior quality, and was therefore adversely affected, or disadvantaged by the purchase. It was frequently argued that inspectors, or any person buying goods for someone else, were not themselves likely to suffer actual physical, or financial harm from the purchase because they had purchased goods for analysis and not for personal consumption. In other words, the purchaser was not prejudiced by the purchase. Lawyers also argued that consumers could not claim to have been 'prejudiced' if the seller gave notice that his goods were 'not of the nature, substance or quality' of the article demanded. This was highlighted in 1878 in the case of *Sandys v Small*. An inspector of weights and measures, acting as a food inspector under the Act, went into a public house in Derby and requested half a pint of whisky which was placed in a bottle by the publican. The inspector denied seeing any notices when he bought the whisky, although it was later proved that the publican had placed several in the bar, which stated, 'all spirits sold here are mixed'. The whisky, when analysed, proved to be mixed with water and thirty degrees under normal strength. However, magistrates dismissed the case on the grounds that the seller had placed notices in a prominent position to say the article was mixed, although the inspector had not seen them,

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[71] Sale of Food and Drugs Act, 1875, s. 6.

and because of this the sale was deemed not to be 'to the prejudice of the purchaser'.[72]

One important omission in the Act was the failure to define what quantity of sample was to be obtained. Inspectors were given no guidance on this and most seemed unaware that analysts needed specific amounts before an accurate analysis could take place. Both public analysts and Excise Chemists complained that individual samples were often of insufficient quantity. It was not until 1894 that official guidelines on this aspect of sample collection were issued by the LGB. In its memorandum, the LGB advised local authorities to inform their inspectors of the new requirements which were based on suggestions received from the Excise Chemists. The new amounts for each sample were: one pint of milk, three-quarters of a pound of butter, lard or coffee and three-quarters of a pint of spirits. Although restricted to just a few items these instructions did finally provide some basic guidelines for inspectors.[73]

However, while an increase in the quantity of each sample may have assisted the analyst in his task, it quite possibly created another problem for inspectors. By requesting amounts larger than an ordinary customer was likely to ask for many shopkeepers would have been alerted that the purchaser was in fact an

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[72] G.F.L. Bridgman (ed) *The All England Law Reports, Reprinted*, 1874-1880, 1964, p. 402. Thomas Herbert, *The Law on Adulteration*, 1884, p.112. Following the Sale of Food and Drugs Act Amendment Act, 1879, it was no longer a defence for the prosecution to allege that a 'purchaser having bought only for analysis, was not prejudiced by such sale', s. 2.
[73] *Twenty-third Annual Report of the Local Government Board*, 1893-1894, (C. 7500) XXXVIII, Appendix A.

inspector.[74] The 1894 directive also required inspectors to divide samples as 'nearly equally as possible'. While the 1875 Act had required samples to be divided into three, one for the analyst, one for the inspector and one for the seller, the proportion of this division had not previously been stipulated and many samples were divided unequally.[75]

Other anomalies within the legislation led to lengthy courtroom debates over seemingly trivial aspects of sample collection. In 1877, a milk-seller was summonsed for refusing to sell milk to an inspector out of a can from which another customer had just been supplied. The milk-seller said the inspector could not have milk out of that particular can, but could purchase some from another can; the inspector refused this. The debate in this case hinged on the wording in s.17 of the Act which stated that, in cases where inspectors wished to make a purchase, the goods should have been, 'exposed to sale, or on sale by retail on any premises or in any shop or stores...'. While there was concern in this instance that the prosecution would fail because the milk had not been exposed to sale in 'a shop or stores' much of the debate centred on the question of the comma after 'sale' and whether the remainder of the section referred in fact to a different matter. In the event the magistrates convicted the defendant, but concluded rightly that there was a great deal of ambiguity in the section.[76]

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[74] *Forty-first Annual Report of the Local Government Board* 1911-1912, (Cd. 6331) XXXV, p. lx.
[75] *Twenty-third Annual Report of the Local Government Board,* 1893-1894, (C. 7500) XXXVIII, Appendix A, no. 2.
[76] *The Analyst,* 1877, **2**, (16), p. 69.

The Margarine Act 1887

Whether articles had been 'exposed to sale' was not made any clearer following the introduction of the Margarine Act of 1887. While this chapter is primarily concerned with difficulties faced by inspectors in implementing the 1875 Sale of Food and Drugs Act, the Margarine Act also presented inspectors with a number of difficulties. This Act was introduced after dairy producers expressed concern that their business was being undermined by the sale of margarine as butter. The manufacture and sale of margarine had become increasingly common since the 1870s and, by the 1880s, the Dutch were mixing it with butter and exporting it to Britain. Margarine was considered by many to be a 'dangerous' substance and there were moves to prohibit it altogether. Largely as a result of the efforts of Lyon Playfair, the chemist and MP for the Universities of Edinburgh and St Andrews, such doubts were overcome. Playfair put forward scientific arguments that margarine was an improvement on rancid butter and could be nutritionally beneficial to the working classes.[77] The Margarine Act of 1887 defined what was meant by the terms 'butter' and 'margarine'. The word 'butter' meant the substance made exclusively from milk or cream or both, with or without colouring matter, while 'margarine' meant all substances prepared in imitation of butter whether mixed with butter or not and only to be sold as margarine.[78]

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[77] Anne Hardy, 'Lyon Playfair and the Idea of Progress: Science and Medicine in Victorian Parliamentary Politics' in Dorothy Porter & Roy Porter (eds) *Doctors, Politics and Society: Historical Essays*. 1993, pp. 81-106.
[78] Margarine Act, 1887, (50 & 51 Vict. c. 29), s. 3.

The Act also laid down very specific labelling requirements for every package. The word 'Margarine' was to be placed on the top, bottom and sides in printed capital letters 'not less than three quarters of an inch square'. If the margarine was for retail sale, an additional label was required with the word 'Margarine' printed in capitals 'not less than one and a half inches square'. In all cases where these measures were not carried out then the margarine was to be wrapped and the word 'Margarine' printed in capitals 'not less than a quarter of an inch square'.[79] Manufacturers of margarine were required to register with their local authorities and inspectors were now permitted to examine the various samples of butter in the shop and to take samples for analysis before purchasing, although all other aspects of the sampling procedure had to be adhered to.[80]

Once again ambiguities in the law demonstrated how problematic sample collection could be for inspectors, especially when adulteration cases came to court. Many disputes concerned s. 6 of the Margarine Act which outlined the labelling requirements but also required that the margarine be 'exposed for sale'. Clever defence lawyers argued endlessly over technicalities in this section with the result that some traders, possibly guilty of adulteration, were acquitted. In one example the inspector was served with a portion of margarine cut from a larger slab which had been hidden by a screen. Although the margarine was wrapped it had no label. The Court considered that because of the screen the margarine had not been 'exposed for sale' and therefore no label was required. It was even suggested that because the article was wrapped in paper it was

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[79] Margarine Act, 1887 s. 6.
[80] Margarine Act, 1887, s. 9, s.10.

invisible to the purchaser and therefore was not 'exposed for sale'. As one Justice noted this interpretation was completely ridiculous and the term 'exposed for sale' could not possibly be limited to mean only 'exposed to view'. [81]

Number of Samples Collected

Year	Number of Samples
1877	14,706
1880	17,673
1885	23,230
1890	27,465
1895	43,962
1900	65,858

Sample Numbers 1877-1900. Source: LGB Annual Reports.

As can be seen from the above table in the years following the 1875 Act the number of samples taken and sent for analysis increased steadily. In 1877, only 14,706 samples had been submitted for analysis. By 1900, this figure had increased to 65,858.

While these figures indicate an overall increase in sample numbers, there were great variations around the country and, despite constant reminders from the LGB, the collection of samples in many areas remained poor. In 1877, only 30

[81] Bell, Scrivener and Lloyd, 1903, pp.104-105.

samples in total were collected from the five counties of Berkshire, Cornwall, Oxfordshire, Essex and Suffolk.[82] By 1882, although the total number of samples analysed had increased to 19,439, many areas continued to ignore the Act. In this year, no samples at all were received from the counties of Berkshire, Dorset, Hereford, Hertfordshire and Suffolk, while other areas managed only a small number.[83] In Oxfordshire sample collection always remained poor with only nineteen samples collected during 1884 and eleven in 1890.[84]

In an attempt to shame local authorities into applying the 1875 Act more effectively, the LGB named in its annual reports areas where sample collection was either poor or non-existent. In the report for 1882-1883, the Board noted that for 69 boroughs with an aggregate population of more than a million, no samples at all had been obtained. In the boroughs of Coventry, Nottingham, Blackburn and others, the Acts were 'entirely, or almost entirely, ignored'. In the south-west, the 18 boroughs within the counties of Dorset, Devon and Cornwall sent only 70 samples and 60 of these came from the city of Exeter.[85] Frequently a note of frustration crept into the LGB Reports on this issue. In the Report for 1880-1881 the Board, having gone through the usual list of authorities where the Act was 'practically inoperative', then noted:

> In many such cases we have endeavoured to induce the Authorities to exercise the power conferred on them by the 13th

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[82] *Seventh Annual Report of the Local Government Board,* 1877-1878, (C. 2130) XXXVII.
[83] *Twelfth Annual Report of the Local Government Board,* 1882- 1883, (C. 3778) XXVIII.
[84] *Thirteenth Annual Report of the Local Government Board*, 1883-1884, (C. 4166) XXXVII. *Nineteenth Annual Report of the Local Government Board*, 1889-1890, (C. 6141) XXXIII.
[85] *Twelfth Annual Report of the Local Government Board*, 1882-1883, (C. 3778) XXVIII.

> section of the Act of 1875, of having samples subjected to analysis from time to time, but we have too often been unable to obtain more than a general statement that as adulteration is not suspected to exist the Town Council deem it unnecessary to harass the local tradesmen...[86]

With restricted powers in the Act, the LGB could rely only on admonishments to shame local authorities into action. In some cases this appears to have had some effect and sample numbers did increase. In the Report of 1896 the LGB observed that in 1891 the Act had been 'practically inoperable' in twenty-two counties, nineteen of the largest towns in England as well as two metropolitan districts. The LGB corresponded with these authorities 'urging them to take action' and in 1896 the Board noted that 'a great number have improved'.[87] However, in other areas repeated entreaties from the LGB to improve sample collection made little difference.

While the number of samples submitted for analysis varied according to area, there were also variations in the number of samples submitted according to product. Milk always formed the largest proportion of samples submitted and in some years accounted for almost half the total number of samples analysed. In 1884, out of a total number of 22,951 samples gathered in England and Wales, 10,009 were samples of milk.[88] Bread usually formed the next largest category,

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[86] *Tenth Annual Report of the Local Government Board*, 1880-1881, (C. 2982) XLVI.
[87] *Twenty-sixth Annual Report of the Local Government Board,* 1896-1897, (C. 8583) XXXVI.
[88] *Fourteenth Annual Report of the Local Government Board,* 1884-1885, (C. 4515) XXXII.

followed by items such as flour, butter and coffee.[89] Clearer definitions of what was meant by the terms 'butter' and 'margarine', together with changes in sampling procedures meant that the number of butter samples sent for analysis increased in the years following the introduction of the Margarine Act. In a five year period between 1889 and 1894 the number of samples submitted more than doubled.[90]

With the LGB reports indicating an overall increase in sample numbers following the introduction of the 1875 Act, it would be interesting to compare the effectiveness of the various types of inspector involved in the sample collection process. For example, were more samples collected in areas where inspectors of weights and measures performed this task and fewer where the police had this responsibility? However, there are difficulties in assessing this. The inspectors submitted their reports to the public analyst. These were then submitted to the local authority who in turn sent them to the LGB, where they were collated and the results published in the Board's Annual Reports.[91] In the early years after the introduction of the 1875 Act, the reports from public analysts were often poorly written and frequently did not record which inspector had actually collected the sample. One exception is found in records from the county of Kent, where in 1886 the public analyst compared the relative efficiency of

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[89] Despite constant complaints from the LGB, numbers of drug samples were always consistently low. In 1883 only 304 samples of drugs were received compared to 8,119 samples of milk. In 1895 only 1,439 samples of drugs were received compared with 18,307 samples of milk. *Thirteenth Annual Report of the Local Government Board,* 1883-1884, (C. 4166) XXXVII. *Twenty-fifth annual Report of the Local Government Board,* 1895-1896, (C. 8212) XXXVI.

[90] 2,679 samples of butter were submitted for analysis in 1889. This number had increased to 6,419 by 1894. *Nineteenth Annual Report of the Local Government Board,* 1889-1890, (C. 6141) XXXIII. *Twenty-fourth Annual report of the Local Government Board* 1894-1895, (C. 7867) L.

[91] While many of the original quarterly and annual reports of public analysts can be viewed at The National Archives, I have not been able to locate any daily records kept by inspectors.

inspectors collecting samples in the years between 1875 and 1885. Kent was divided into fourteen districts for sample collection, some areas used police officers and others weights and measures inspectors. The investigation indicated that police officers collected more samples than weights and measures inspectors. Between 1875 and 1885 inspectors of weights and measures collected 1,289 samples while, during the same period the police collected 2,725 samples. While the public analyst gives credit to the 'collectors of samples' for such positive results he offers no suggestions for the variation between the two sets of figures.[92]

Samples Submitted by the Public

Although the total number of samples submitted for analysis throughout the country increased, the number of samples submitted by the public decreased. In 1879, out of a total of 17,049 samples submitted for analysis, 528 were submitted by private individuals. By 1883, the total number of samples had increased to 19,648, but only 252 were private submissions. By 1890, the total number of samples submitted for analysis had risen to 27,465, but the number submitted by private purchasers had fallen still further to 107.[93]

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[92] Report from M.A. Adams, Kent Public Analyst, 1886, LGB Correspondence with Local Authorities, Kent 1886, TNA, MH 30/113.
[93] *Ninth Annual Report of the Local Government Board,* 1879-1880, (C. 2681) XXVI. *Twelfth Annual Report of the Local Government Board,*1882-83, (C. 3778) XXVIII. *Thirteenth Annual Report of the Local Government Board,* 1883-1884, (C. 4166) XXXVII,. *Twentieth Annual Report of the Local Government Board,* 1890-1891, (C. 6460) XXXIII.

In their annual reports, the LGB continually drew attention to the low numbers of private samples and observed that in cases where private purchasers did submit samples, the percentage levels for adulteration were always higher than for samples submitted by designated inspectors. In 1879, the LGB reported that 25 per cent of the 528 samples submitted by private purchasers were adulterated, compared with a figure of 14.5 per cent of the samples submitted by inspectors. With milk samples the difference was even more dramatic. Of 176 samples obtained by private purchasers, 45.5 per cent were adulterated. This percentage was considerably higher than samples obtained by inspectors where the proportion found to be adulterated was 18.6 per cent.[94] There were two main reasons for higher rates of adulteration in samples submitted by the private purchaser. Firstly, it was unlikely that private individuals would go to the trouble and expense of obtaining a sample for analysis, unless there were strong grounds for suspecting adulteration. Secondly, private purchasers were far more likely to go unrecognised, and would therefore obtain goods exactly as sold to the general public and not those specially selected for an inspector.

Sampling Ratio

The LGB considered that one of the most effective ways to tackle adulteration was to have a high ratio of sampling relative to population. It was thought that such a move would act as a deterrent to traders who would believe that they stood a very real chance of a visit from an inspector. The LGB noted that during

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[94] *Ninth Annual Report of the Local Government Board*, 1879-1880, (C. 2681) XXVI, p.cxvii.

1880 one sample had been obtained for every 1,444 of the population of England and Wales. It recommended that an ideal target would be to see at least one sample taken annually for every 1,000 persons.[95] It is not clear how the Board arrived at these target figures nor is it clear how they expected them to be achieved, as there was no corresponding suggestion that the numbers of inspectors should be increased.

Later, the Select Committee on Food Products Adulteration in 1896 would confirm the Board's assumption that increased sampling would bring about a decrease in adulteration. The Committee noted that 'a close connection exists between the extent of adulteration and the number of articles submitted for analysis...the proportion of adulterated samples being found to diminish as the number of samples relative to the population increases'.[96] As an example, the Committee presented figures for 1890 showing the sample to population ratio in a number of counties together with adulteration rates in those areas. In Oxfordshire, a county where sample collection was always poor, the number of samples collected per head of population was extremely low with only one sample being collected for every 14,963 of the population. At the same time the percentage figure for adulteration was high at 41.7 per cent of all samples analysed. In Somerset, one sample was obtained for every 379 of the population and here adulteration rates were low at just 3.6 per cent of all samples analysed.[97]

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[95] *Tenth Annual Report of the Local Government Board*, 1880-1881, (C. 2982) XLVI.
[96] *Select Committee on Food Products Adulteration,* 1896, (288) IX, p. iii.
[97] *Select Committee on Food Products Adulteration,* 1896, (288) IX, pp. iii-v.

While the figures for Somerset would seem to indicate that higher rates of sampling reduced adulteration, there were many other factors that might have influenced this reduction and some caution has to be used before making an obvious correlation between high rates of sampling and a reduction in adulteration rates. In London the opposite appeared to be the case and consistently higher rates of adulteration were reported, despite almost twice as many samples being collected in proportion to the population as in other more rural areas. In 1889, one sample was obtained for every 557 of the London population. Despite this high sampling ratio, adulteration levels remained high at 18.4 per cent of all samples analysed. In the rest of the country with a lower ratio of one sample being obtained for every 946 of the population, the average adulteration rate was lower at 11.5 per cent of all samples analysed.[98] One possible explanation for this anomaly was that in London, despite higher numbers of samples being gathered per head of population, inspectors were more likely to go unrecognised and therefore more likely to be given samples as sold to the general public.

By 1896, despite the fact that there were still many areas of the country where samples were not being collected, the LGB was beginning to be extremely optimistic about the overall increase in sample collection.[99] Certainly figures produced by the Board indicate some reason for this optimism. However, whether increased sample collection actually reflected a reduction in levels of

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[98] *Twentieth Annual Report of the Local Government Board*, 1890-1891, (C. 6460) XXXIII, p.cli. *Nineteenth Annual report of the Local Government Board*, 1889-1890, (C. 6141) XXXIII.
[99] *Twenty-sixth Annual Report of the Local Government Board*, 1896-1897, (C. 8583) XXXVI, p.cxxxviii.

adulteration and an improvement in food quality, is one of the issues that will be discussed in the following chapter.

Summary

For the 1875 Sale of Food and Drugs Act to be successful it was essential that implementation at local level was carried out in the most efficient and reliable way possible. This was especially true for sample collection; one of the most fundamental and basic aspects of the Act. However, as this chapter has demonstrated the procedure for collecting samples was far from straightforward. The difficulties encountered by inspectors when performing this task do, in many cases, raise questions about the accuracy of this procedure and the reliability of data based on it.

Inspectors faced many practical constraints, the most significant being that they were easily recognised. As a result they were often given samples that did not truly represent general food quality. To ensure a successful conviction sample collection needed to be carried out correctly in the manner prescribed by the Act. Most inspectors lacked training on this procedure and mistakes were easily made. When cases came to court, lawyers exploited these weaknesses which meant that defendants guilty of adulteration often escaped being convicted. Other factors, such as limited manpower, anomalies in the law and the general intransigence on the part of some local authorities about appointing inspectors,

or pursuing prosecutions, were additional factors that prevented sample collection being carried out in the most efficient and reliable way.

An indication that such difficulties could influence the validity of sample collection can be seen in the adulteration figures published by the LGB in their annual reports. These showed that where samples had been submitted by private individuals who, in most cases, were not hampered by the constraints experienced by inspectors, these invariably showed higher rates of adulteration than samples gathered by inspectors. Although the number of samples collected by private individuals was always low, these figures may suggest that samples gathered in this way were a more accurate representation of the quality of food at this time.

Chapter Five

Local Implementation Part II: Sample Analysis

This chapter will look at the role of public analysts and show that these officials, like inspectors who collected samples, were hampered by many constraints when undertaking their role under the Act. In some cases they were faced by practical difficulties, such as large geographical areas. In others, local authorities either failed to appoint an analyst, or did so reluctantly building in as many safeguards as possible to ensure the Act was not applied too effectively. Omissions in the law such as the lack of official standards together with the failure to define what was meant by 'adulteration' presented further problems, and also exacerbated ill-feeling that already existed between public analysts and the Excise Chemists. These disagreements did little to engender public confidence in the system of reference which had been set up under the 1875 Act. Other constraints such as anomalies in the law often made the conviction of adulteration offenders difficult, while low fines imposed by magistrates did nothing to discourage those convicted of adulteration offences from re-offending, nor act as a deterrent to others.

The Appointment of Public Analysts

The 1875 Act made local authorities responsible for the appointment of public analysts while the LGB had overall responsibility for approving appointments and terminating them if necessary. Town councils of any borough were permitted to appoint analysts already employed by the county or any neighbouring borough, so public analysts could hold multiple posts. Public analysts seeking appointment were not permitted to be associated with any business connected with the sale of food or drugs in the area in which they worked.[1] Although the 1875 Act required local authorities to appoint analysts 'when required to do so' by the LGB, as noted in chapter two, there was no requirement within the legislation that obliged local authorities to put the Act into force once an analyst had been appointed. It was not until the Sale of Food and Drugs Act of 1899 that local authorities had an absolute legal duty to appoint public analysts and to carry out the various provisions of the Act.[2]

Assessing Suitability

Previous adulteration legislation required the analyst to have 'competent medical, chemical and microscopical knowledge'. In addition, the 1875 Act required the analyst to have 'experience' and to provide the LGB with 'satisfactory proof of competency', if required, when submitting his application.[3] As discussed in chapter three, with no recognised test of chemical competence,

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[1] Sale of Food and Drugs Act, 1875, s.10.
[2] Sale of Food and Drugs Act, 1899, s. 3.
[3] Adulteration of Food, Drink and Drugs Act, 1872, s. 5. Sale of Food and Drugs Act, 1875, s.10.

or approved awarding body, establishing 'competency' was a difficult task. Candidates were required to provide at least six testimonials when applying for a particular appointment. The value of this exercise, and the whole competency issue, would be questioned later in the century by Otto Hehner, public analyst for Nottinghamshire and West Sussex, and a former President of the SPA.[4] Giving evidence to the Select Committee on Food Products Adulteration in 1896, Hehner observed that in many cases the appointing body, whether it was a town council, vestry or county council, had no means of judging the suitability of candidates and often the person to show the finest 'array of testimonials' was appointed.[5]

Public analysts also came from a wide variety of backgrounds. Some had chemical training, others were MOHs with little chemical training, while others had a pharmaceutical background. Few acted as full-time public analysts and most held other professional positions. Often this was as a consultant in areas such as the manufacturing industry or agriculture. These consultancy posts might also be combined with academic or hospital posts. Examples of this occupational diversity can be seen in some of the testimonials submitted by public analysts to local authorities. Applying for the post of public analyst for the county of Cheshire in 1876, Joseph Carter Bell, analyst for Salford, submitted twenty-one testimonials. These indicated that Bell was consultant to numerous manufacturing companies in the north of England as well as in London. He also

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[4] In some instances testimonials received were far in excess of this number. In the case of the analyst for Lancaster, Dr Campbell Brown who was appointed in 1876, twenty-seven testimonials were provided. Lancaster County Register Correspondence, 1872-1882, TNA, MH 30/124.
[5] Evidence of Otto Hehner, *Select Committee on Food Products Adulteration* 1896, (288) IX, Q. 31.

worked occasionally for William Crookes, editor of the *Chemical News*.[6] Thomas Stevenson, public analyst for the counties of Surrey and Bedfordshire, was also analyst and MOH for St Pancras. He was appointed as analyst to the Home Office in 1872 and was also a lecturer at Guy's Hospital in London.[7]

Pay Structure for Public Analysts

The Public Analyst post was not a full-time one. For most public analysts, it was essential to have a variety of professional occupations, sometimes in the form of several public analyst posts, as remuneration for the post was often poor. Local authorities, who met the cost of employing public analysts out of the rates, not only determined pay scales but also decided how these payments should be made. In some cases this was by a fixed annual salary, often supplemented by an additional payment for each sample analysed. In other cases, payment was made for each analysis but with no annual payment. Although many analysts wished to be paid a fixed annual salary, the 1875 legislation did not make provision for this and the question of salary was left entirely up to employing authorities. What this meant in practice was that levels of pay, usually set by sanitary committees, became a complete medley of rates and conditions that

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[6] Many of these companies were in the iron and coal industry such as the Wigan Coal and Iron Company and the Blaina Iron and Coal Company. Other consultancies were with a variety of concerns such as the Pendleton Alum Works, the Hyde Chemical Company, Spence Brothers Chemical Company, R.R. Kelly and Company and the Norton Estate Office. These testimonials are contained in a booklet 'Candidate for the Appointment of Public Analyst for the County of Chester. Testimonial of J.Carter Bell', 24 November 1876, LGB Correspondence, Chester, 1872-1882, TNA, MH 30/29.

[7] LGB Correspondence, Bedford,1873-1888, TNA, MH 30/4, MAF 101/379, HO 45/9620/A15734.

varied throughout the country.[8] Individuals employed as a public analyst by more than one authority could receive different remuneration for similar work. This confusing situation clearly illustrates the problems inherent in the employment structure of locally administered officials.

In areas of the country where analysts did receive an annual salary, rates of pay varied enormously. Alfred Allen, appointed analyst for the West Riding of Yorkshire in 1877, received an annual salary of £250 per year. Joseph Carter Bell, appointed analyst for Cheshire in 1876, received £100 per annum as did Wentworth Lascelles Scott, the analyst for Staffordshire. For others the annual salary was much lower. Thomas Stevenson, analyst for Bedfordshire received £52 10s 0d per annum, while John Horsley, appointed analyst for Herefordshire in 1877, received just £20 per annum.[9]

Annual salaries were often supplemented by additional payments. In many cases there was an additional sum for each sample analysed. While the 1875 Act had determined that a private purchaser pay a fee of up to ten shillings and sixpence to the analyst for sample analysis, many local authorities often paid their analyst much less. In Bedfordshire and Staffordshire for example, the analyst was only paid six shillings for each sample analysed. Extra payments were also made for issuing certificates certifying adulteration, as well as travelling expenses and

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[8] Examples of this great diversity can be seen at TNA in MAF 101/378 and MAF 101/379. These records detail rates of pay and conditions for analysts in counties, boroughs and urban districts between 1873-1955. MAF 101/379 is listed by TNA as Local Government Board: register of analysts by boroughs and urban districts 1873-1956. However, this file is an alphabetical register of analysts by counties. MAF 101/378 is listed by TNA as Local Government Board: register of analysts by counties 1873-1956 but does in fact refer to boroughs and urban districts.

[9] TNA, MAF 101/379.

attendance at court. In some instances, there was an element of 'payment-by-results'. In Buckinghamshire, the analyst received his £1 1s 0d payment for attending court as a witness only when a prosecution was successful. In some areas, analysts were paid to submit quarterly reports in the hope that this would encourage prompt submissions. In Herefordshire the analyst was paid £20 per annum for completing these, while in Berkshire, the analyst was paid £2 12s 6d for each of his quarterly reports.[10]

To further complicate matters some local authorities who made payments per sample introduced a sliding scale of fees in which rates of pay were often in inverse proportion to the number of samples analysed. In practice, this meant that the more samples analysed, the less an analyst was paid. While these amounts varied, many authorities paid similar rates to those paid by the authorities in the county of Essex where in 1881 the analyst, Thomas Pooley, received £1 1s 0d for each sample up to 100, ten shillings and sixpence for each sample up to 200 and six shillings per sample after that. In Bury St Edmunds in 1879, the analyst was paid ten shillings for each sample up to fifty and five shillings per sample over this number.[11] In local authorities where the analyst received no annual salary but was paid for each analysis he performed, the sliding scale system was obviously open to abuse. While the dishonest analyst could claim payment for more samples than he actually analysed, others might feel that they had little incentive to do more work once the quota of samples at the higher rate of payment had been completed.

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[10] TNA, MAF 101/379.
[11] Essex County Register Correspondence 1872-1882, TNA, MH 30/73, MAF 101/378.

By the 1890s, the situation on pay had not improved and it seems that public analysts could expect little more in the way of remuneration than they had twenty years previously. With more analysts in post and therefore more employing authorities, pay structures were even more variable and complicated than they had been in the 1870s. Many authorities continued to pay analysts on the basis of each sample analysed with no annual salary. Where annual salaries were paid, especially at the higher end of the scale, it was less common for additional payments to be made for individual analyses, although there were exceptions. For example, in 1895 the analyst for Lancaster received £350 per annum plus a payment of eight shillings for each analysis. In Durham, the analyst received £200 per annum plus six shillings for each analysis. By the 1890s, and as a reflection of changing times, some additional payments were being made. They included payments towards the cost of a telephone, payments for railway and cab travel, postal and laboratory expenses. It was also by then fairly routine for authorities to pay expenses for court attendance.[12]

Occasionally, some employing authorities made completely different arrangements and paid analysts extra for examining specific foods. Examples of these rates were given during the Select Committee on Food Products Adulteration in 1895. In Exeter, the analyst was paid a salary of £20 per annum with an additional ten shillings and sixpence for each analysis of tea, butter, lard, beer, porter, bread, flour and drugs. For analysing coffee, chicory, cocoa, milk, mustard and vinegar, he was paid five shillings and three pence per analysis. In

[12] *Select Committee on Food Products Adulteration*, 1895 (363) X, 'Remuneration of Analysts', Appendix no. 9, pp. 376 - 380.

Great Yarmouth, foods were grouped into three categories with payments for each category respectively at £2, £1 and ten shillings per sample.[13] Why such a complicated system was introduced is not clear. No doubt some items needed more skill or specialist apparatus to test. Time was no doubt a factor as analysts claimed that milk for example might take the best part of a day to analyse.[14] Paying a different fee for analysis of different commodities was not common; in 1895, only eight authorities out of a possible 238 were making such payments. Authorities who used this method did, on the whole, pay more for the analysis of the more commonly adulterated items of food and drink, such as bread, milk, tea, and butter; but there were exceptions. In Huddersfield and Ipswich, analysis of milk samples was paid at five shillings and seven shillings and sixpence respectively, while all other analyses were paid at ten shillings and sixpence.[15] Some authorities stipulated that in order for the analyst to qualify for payment a specific *minimum* number of samples had to be analysed. The Isle of Wight, for example, determined a minimum of 40 analyses per year. In other areas the number of samples analysed was not to exceed a *maximum* number. In the St. Giles District of London analyses were not to exceed 300 while in Wandsworth the number of analyses was not to exceed 400.[16]

Exactly how these diverse rates were determined by individual local bodies is not clear. However, the people who decided these matters at local level, such as

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[13] *Select Committee on Food Products Adulteration,* 1895, (363) X, 'Remuneration of Analysts' Appendix no. 9.
[14] Evidence of Francis Sutton, Public Analyst for Norfolk, *Select Committee on Adulteration of Food Act (1872)*, 1874, (262) VI, Q. 4544.
[15] *Select Committee on Food Products Adulteration,* 1895, (363) X, Appendix, no. 9, p. 378.
[16] *Select Committee on Food Products Adulteration,*1895, (363) X, Appendix, no. 9.

members of sanitary committees, often had little idea about the analyst's role or the part he was expected to play in the implementation of the 1875 Act.[17]

Sample Analysis

Once the public analyst had received samples from designated inspectors he was then responsible for determining whether an article was in fact adulterated, and if so the extent of the adulteration. In an effort to ensure that the sample was analysed as soon as possible after purchase, the 1875 Act required that analysis should take place 'with all convenient speed'.[18] Frequently this was not the case and samples were often left for days before being submitted for analysis. For perishable samples such as milk and butter, decomposition would quickly set in and could invalidate the results of any analysis. To take account of this, the analyst was required to note in his certificate whether in fact any change had taken place due to decomposition.[19]

The Analyst's Certificate

The form of the certificate to be issued by the analyst following analysis was clearly set out in the 1875 Act. This required him to state whether the sample was genuine or adulterated. If adulterated, he was required to state the exact

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[17] While many local authority minutes detail discussions on the pay structure for MOHs or inspectors of nuisances, I have been unable to locate any detailed discussions at local level as to how pay rates for analysts were determined.
[18] Sale of Food and Drugs Act, 1875, s.13. The speed at which samples were analysed was improved somewhat by s. 10. of the 1879 Sale of Food and Drugs Act Amendment Act which in the case of perishable samples required that prosecutions be instituted 'not exceeding twenty-eight days from the time of purchase'.
[19] Bell, Scrivener and Lloyd, p. 87.

percentages of adulteration found. An important aspect of this clause, and one that caused many difficulties when adulteration cases came to court, required the analyst to state the *facts* about the sample rather than simply giving his *opinion*. He was also required to note who had collected the sample and who had delivered it to him.[20] The certificate of the analyst was the foundation of any prosecution and was accepted as sufficient evidence unless the defendant requested that the analyst himself attend the hearing. As noted in the previous chapter, proceedings could be initiated by the person who had purchased the sample, such as the inspector or a private individual. However, in most cases the decision to prosecute was taken by the local authority.[21]

The Analyst's Report

The 1875 Act also required analysts to submit a quarterly report to their employing authority stating the number and type of samples submitted to them plus the results of analyses. This information was then submitted by the employing authority to the LGB for publication in their annual reports. Initially hand-written, these quarterly reports contained only what the analyst considered necessary. In many cases, this was limited to the briefest of details. Such reports are often difficult to interpret now and could have been unclear at the time. In an effort to ensure a more uniform and efficient system, in 1878 the LGB devised a format for returns and specimen examples of these forms were sent to local authorities.

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[20] Sale of Food and Drugs Act, 1875, s.18. Bartley, 1907, pp. 78 - 82.
[21] Bell, Scrivener and Lloyd, p. 62.

Each report was to include:

1. The description of article submitted for analysis.
2. Whether or not the sample was submitted to the Analyst by an officer acting under direction of a Local Authority, under s.13 of the Act.
3. Whether the sample was genuine or adulterated, and, if adulterated, what was the nature and extent of the adulteration.
4. The sum paid in respect of the analysis.
5. The observations, if any, which the Analyst may wish to make in reference to the analysis.[22]

Once these reports had been received by the LGB they were collated and figures for adulteration published in the Board's annual reports. It is these reports that were used by the LGB — and subsequent historians — to make assessments as to the effectiveness of the Act.

Practical Difficulties

While the 1875 Act set out clear guidelines for the appointment of public analysts and the analysis of samples, this could only be achieved if local authorities agreed to implement the Act and appoint a public analyst. Initially many authorities seemed reluctant to do this, for which there appear to have been two main reasons. The first was a question of cost. The entire cost of employing a

[22] *Eighth Annual Report of the Local Government Board* 1878-1879, (C.2372) XXVIII, Appendix A. no. I.

public analyst had to be met out of the rates, although this was not the case for some other local officials. For example, local authorities could if they wished claim from the LGB some part of the cost of employing a MOH or an inspector of nuisances. If councils felt that adulteration was not a problem in their area, and often this was the case where no public complaints had been made, there seemed little need to spend public money on the appointment of an analyst. The second reason was that many local council members were themselves shopkeepers. For them, the employment of a public analyst could mean the first step towards the restriction of certain trade practices, such as the selling of 'mixtures' and many traders viewed with disfavour any move in that direction.

Local variations in the appointment of analysts resulted in patchy implementation of the Act. One result was that those who wished to adulterate their goods simply moved into areas where there was no analyst. This was particularly easy for milkmen as illustrated by a case that came to court in 1876. In this case, a Bath milkman admitted that he carried two cans, one contained pure milk which he delivered in the area where there was a public analyst, the other can contained milk adulterated with water which he sold in the area where there was no analyst.[23]

[23] *The Analyst*, **1** (2) 1876, p. 35.

In their yearly reports, the LGB consistently expressed concern on this issue. Many of these reports named those authorities who had failed to appoint an analyst and urged them to do so as soon as possible.[24] However, while the Act required local authorities to appoint analysts when required to do so by the LGB, the Board had limited powers and seemed unable — or unwilling to do little other than send letters to errant authorities reminding them of the 'importance and expediency of making suitable appointments'.[25]

Gradually the situation on the appointment of analysts began to improve. In 1876, the LGB reported that 126 authorities had appointed analysts 'with the approval of the Board'.[26] The LGB published these figures annually and by 1900 the number of authorities who had appointed analysts had risen to 237.[27] However, between these two dates there are certain anomalies. For example, in 1880 the Board noted that 253 authorities had appointed analysts but in 1890 this number had dropped to 231.[28] This somewhat confusing picture is explained by Ingeborg Paulus as an 'administrative counting matter' and seems to have come about as a result of the Local Government Act of 1888, which reduced the number of sanitary authorities and therefore the number of authorities who might appoint an analyst.[29] While the LGB expressed some satisfaction at the increase in the number of analysts, as discussed in the previous chapter, many authorities appointed an analyst but then failed to appoint inspectors to collect samples.

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[24] *Eighth Annual Report of the Local Government Board* 1878-1879, (C.2372) XXVIII, p.cxxviii.
[25] *Eleventh Annual Report of the Local Government Board* 1881-1882, (C.3337) XXX Pt.1, p. xcviii.
[26] *Sixth Annual Report of the Local Government Board* 1876-1877, (C.1865) XXXVII.
[27] *Thirtieth Annual Report of the Local Government Board* 1900-1901, (Cd.746) XXV.
[28] *Tenth Annual Report of the Local Government Board* 1880-1881, (C. 2982) XLVI, *Twentieth Annual Report of the Local Government Board* 1890-1891, (C.6460) XXXIII.
[29] Paulus, p.106.

Another important practical difficulty was that analysts often held positions with a number of local authorities This meant that many covered extensive geographical areas. For example, Walter Fisher appointed analyst for Berkshire in 1886, was also analyst for Oxfordshire, Buckinghamshire and the boroughs of Buckingham and Banbury.[30] As a result inspectors often spent a considerable amount of time conveying samples to their analyst. With perishable samples decomposing rapidly, delays due to logistical problems presented further difficulties for the analyst and the success of his analysis. The extensive workload of some analysts who also covered large geographical areas was of some concern to the LGB and is an aspect of the Act that will be discussed in more detail in the following chapter.

Confusing Pay Structures

The varied and confusing pay structure for analysts can be seen as an important constraint on the successful implementation of the 1875 Act. In some cases the variable pay structures between employing authorities affected recruitment levels; in areas where pay levels were poor, posts would often remain vacant, sometimes for years. It also seems that some authorities deliberately kept pay levels low so that certain candidates, who might operate the Act enthusiastically, would not apply. This practice had been noted prior to the 1875 Act when in 1873 Wentworth Lascelles Scott applied to be public analyst for Wolverhampton. It seems that Scott had wanted to apply for the post but had been told it would

[30] LGB Register of Analysts, 1873-1955, TNA, MAF 101/379.

useless for him to apply as the post had been 'promised to a certain person irrespective of his qualifications'. Undeterred Scott did apply and submitted his testimonials. The Sanitary Committee then decided to pay the analyst on a 'fees only' basis. According to Scott, this was done so that the only suitably qualified applicant (Scott considered this to be himself) would withdraw. Scott did withdraw his application observing that the majority of councillors were 'afraid that the Adulteration Act would be carried out too well if a person with my special acquaintance of the subject were appointed'. Scott was in the event appointed as public analyst for Staffordshire in 1873.[31]

The fact that pay rates were determined at local level had long been a cause for concern among some public analysts. In 1872 Henry Letheby, MOH and Public Analyst for the City of London, addressing the Association of Medical Officers, had warned about the consequences of allowing local authorities complete freedom in this matter. He suggested that the work of public analysts could not be done efficiently below a charge of £100 to £200 per annum to vestries and district boards and warned that if local authorities applied 'too strict economy' the Act would become 'inoperable'.[32] While Letheby was referring here to the implementation of the Adulteration of Food, Drink and Drugs Act of 1872, the Act of 1875 did nothing to improve the situation and the issue of low pay would be a continuing source of frustration for many analysts. Giving an address to the SPA in 1889 the President of the Society, Alfred Allen, summed up many analysts' feelings on pay and the way their role was viewed by employing authorities:

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[31] Letter to the LGB from Scott, 21 January 1873, TNA, MH 25/24, 1873.
[32] *The Lancet,* **2**, 1872, p. 652.

> ...as every public analyst knew the majority of local authorities looked upon the 'analyst' as a sort of necessary nuisance, who was to be paid the smallest sum for doing the smallest possible number of samples. This was occasionally varied by the payment of the smallest possible sum for the analysis of the largest possible number of samples.[33]

Inaccurate Returns

Another difficulty, and one that contributes to doubts about the accuracy of adulteration figures published annually by the LGB, concerned analysts' returns submitted to the Board on the numbers of samples analysed by them and the adulterations found. While the LGB frequently urged for more accurate recording and had established a format for these returns in 1878, many reports continued to be poorly written and difficult to understand. In 1878, the LGB informed the analyst for Devon that some of his reports had reached them in a state 'so blurred as to be almost indecipherable'.[34] It would also appear that, while the Board were concerned about the poor presentation of reports, in some cases they were also doubtful about the accuracy of the contents. For example, in 1881 the Board noted that figures submitted from the Metropolis happened to be '...by a curious coincidence exactly the same as in 1880'. [35] In the following year the Board expressed some scepticism about reports submitted by analysts which

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[33] An address by Alfred Allen on 'Possible future extension of the duties of public analysts', *The Analyst*, **15** (January) 1890, p. 2.
[34] Letter from the LGB to A. Wynter Blyth, Public Analyst and MOH for Barnstable, 28 March 1878. Devon General Register of Correspondence 1873-82, TNA, MH 30/54.
[35] *Eleventh Annual Report of the Local Government Board,* 1881-1882, (C. 3337) XXX, p. xcviii.

indicated low percentage rates for adulteration in Mile End, Leicester and Gloucestershire:

> ...If the amount of adulteration discovered fairly represents the amount which exists, the tradesmen of these favoured localities must have attained to a height of honesty which is uncommon elsewhere.[36]

The presentation of reports improved somewhat in the late 1880s when many areas began to use printed forms which the analyst filled in by hand. Later in the century the entire form would be typed thus reducing the possibility of errors when returns were collated at the LGB.

Anomalies and Omissions in the 1875 Act

Lack of Standards

While anomalies and omissions in the 1875 Act proved to be very real constraints for inspectors collecting samples, deficiencies in the legislation were just as problematic for the public analyst and the way he performed his role. One of the most important omissions was the absence of standards for items of food, drink and drugs. However, this omission is not surprising as there were no generally agreed standards at the time. The lack of official standards presented

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[36] *Twelfth Annual Report of the Local Government Board,* 1882-1883, (C.3778) XXVIII, p. cvii.

many difficulties, best illustrated by the adulteration of milk where the lack of agreed standards not only meant that adulteration was hard to prove analytically, but the resulting disputes on this issue illustrate most sharply the conflicts between public analysts and the Excise Chemists.[37] The lack of agreed standards also meant that when performing their analyses, public analysts often had a problem establishing if an adulteration offence had definitely been committed. This led to inconsistencies when it came to instituting prosecutions. As one witness to the Select Committee of 1879 noted, it was 'an exceedingly bad thing that a man should be convicted in one district for doing that which he may safely do under the same law, in another...'.[38]

As milk was the most frequently adulterated item, public analysts considered it essential to establish some agreed standard for this item. When the 1875 Act failed to provide this, public analysts took it upon themselves to determine their own standards which, through the forum of the SPA they achieved in 1876.[39] However, the SPA recommended standard for milk was not widely accepted. The chemists of the Excise Department disputed the standard as did the LGB. The Board considered the standard to be far too low and that it simply encouraged suppliers of better quality milk to adulterate their product down to the

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[37] There are detailed records of all aspects of this dispute contained in the records of the LGB at The National Archives. One of the most comprehensive records being Food and Drugs Act Correspondence 1876-1892, TNA, DSIR 26/118.

[38] Evidence of Herbert Preston-Thomas, 'first-class clerk' and later Government Inspector at the LGB, *Select Committee on Sale of Food and Drugs Act (1875),*1879, (155) X, Q.44.

[39] In 1876 the SPA had suggested that milk contain not less than 2.5 per cent of fat, and not less than 9 per cent, by weight of milk solids-not-fat, while the method of analysis was to be left to the analyst. In 1886 the SPA suggested this be changed to 3 per cent of fat and 8.5 per cent of non-fatty solids. These were the standards later adopted by the Board of Agriculture in the 1901 Sale of Milk Regulations. *Proceedings of the Society of Public Analysts,* **1**, 1876. *Seventh Annual Report of the Local Government Board*, 1877-1878, (C. 2130) XXXVII.

standard decreed by the Society. The LGB did acknowledge that the problem of milk standards was compounded by the difficulty in distinguishing analytically between milk which had been deliberately watered down and milk from cows where the type of breed, quality of feed and general treatment, might well cause the milk to be naturally inferior. As the Board noted in 1878:

> ...the present state of science does not enable the analyst to pronounce with certainty whether excess of water, down to a certain limit, is due to natural poverty of milk, or to the dilution of milk which was originally good...[40]

As the LGB went on to explain, until the problem of distinguishing analytically between the two types of milk could be resolved, the lower standard would have to be accepted if there was to be any hope of securing convictions for those accused of milk adulteration.

Some attempt to address this problem had been made earlier by James Bell, Principal of the Excise Laboratory. Over a two year period from 1875, Bell arranged for the collection of milk from over 300 individual cows and from twenty-four dairies. The milk was collected from areas around the country including London. In every case, the cows were milked in the presence of an assistant from the Excise Department. As Bell noted, this investigation confirmed that milk varied considerably in composition and was sometimes comparatively

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[40] *Eighth Annual Report of the Local Government Board*, 1878-1879, (C.2372) XXVIII, p.cxxx-cxxxi.

rich in one constituent and comparatively poor in another. To accommodate these differences Bell felt it would be necessary to set a low standard in order 'to avoid wrongful convictions'. Far from clarifying the issue this statement simply confused matters. However, the most contentious aspect of Bell's statement on his findings, certainly as far as public analysts were concerned, was his comment that the variations in the composition of milk were so great 'that we have hitherto hesitated to publish our results'.[41] This statement simply confirmed in the minds of public analysts and the SPA, that the chemists at the Excise Department wished to keep their methods of analysis secret which would make it impossible to challenge their results. As will be shown later in this chapter, by the 1870s relations between public analysts and the Excise Chemists were already poor, and disputes over standards and analytical processes simply exacerbated ill-feeling between the two sides. Relations were not helped by Bell's refusal to address the SPA and discuss his milk investigations or the methods of analysis used in the Excise Laboratory.[42] Bell's reluctance on this point was remedied somewhat by the publication in 1881 and 1883 of his two volume work, *The Analysis and Adulteration of Foods.* This provided extensive discussion of all major food items, including his investigations on milk as well as comprehensive details of methods used for analysis.[43]

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[41] Letter from James Bell 13 August 1877 in reply to a letter from George Jackson, Secretary of the Manchester and Salford Milk Dealers Association sent on 13 July 1877. Food and Drugs Act Correspondence, 1876-1892, TNA, DSIR 26/118.
[42] *The Analyst*, **3**, 1878, p.193.
[43] James Bell, *The Analysis and Adulteration of Foods,* Part I, 1881, Part II, 1883.

Failure to Define 'Adulteration'

Another important omission from the 1875 legislation was the failure to define what was meant by the term 'adulteration'. While the Act deemed it an offence to sell 'to the prejudice of the purchaser' any article of food or drug which was 'not of the nature, substance, and quality of the article demanded...', or that an article should not be 'injurious to health', what these terms actually meant was far from clear.[44] In 1877, the LGB focused attention on this problem and noted that 'some analysts rank as adulterated all samples which are not chemically pure'. Others only considered items to be adulterated if the adulterant made up a substantial part of the sample. As the Board observed, this was clearly unsatisfactory as no successful prosecution could be obtained when evidence on this aspect could be so vague or contradictory.[45]

The SPA had identified this problem and in 1877 drew up its own definition of adulteration for food, drink and drugs. In the case of food or drink an article was deemed to be adulterated:

1. if it contains any ingredient which may render such article injurious to the health of the consumer.
2. if it contains any substance that sensibly increases its weight, bulk or strength, or gives it a fictitious value, unless the amount of such substance present be due to circumstances necessarily appertaining to

[44] Sale of Food and Drugs Act, 1875, s. 3. s. 6.
[45] *Seventh Annual Report of the Local Government Board*, 1877-1878, (C. 2130) XXXVII, p. xciii.

its collection or manufacture, or be necessary for its preservation, or unless the presence thereof be acknowledged at the time of sale.

3. if any important constituent has been wholly or in part abstracted or omitted, unless acknowledgement of such abstraction or omission be made at the time of sale.
4. if it be an imitation of, or be sold under the name of another article.

In the case of drugs:

1. if, when retailed for medicinal purposes under a name recognised in the *British Pharmacopoeia* it be not equal in strength and purity to the standard laid down in that work.
2. if when sold under a name not recognised in the *British Pharmacopoeia* it differs materially from the standard laid down in approved works on materia medica, or the professed standard under which it is sold.[46]

While this definition was an attempt to address a very problematic aspect of the 1875 Act, legally it carried no weight and many analysts continued to make up their own minds as to when an adulteration offence had been committed.

[46] *Proceedings of the Society of Public Analysts,* **1**, London, 1877.

Prosecutions and Convictions

When adulteration cases reached the courts further deficiencies in the 1875 legislation became very apparent. Many problems centred around the system of reference whereby defendants could request that analyses they wished to dispute be sent to the Excise Chemists for a second opinion. Also, because the Act failed to define what was meant by 'adulteration', defendants often escaped conviction because it was impossible to establish that an offence had actually been committed. The Act provided definitions for 'food' and 'drug' but these were too general and provided numerous loopholes that allowed traders to avoid prosecution.[47] For example baking powder, which was frequently adulterated with alum, was not deemed to be a food and so a grocer could sell adulterated baking powder with impunity. Yet, if this adulterated baking powder was mixed with another ingredient and sold to the public in a foodstuff, this *was* deemed to be an offence.[48] Another important constraint was the lenient attitude of many magistrates towards adulteration offenders. The low fines imposed had little deterrent effect on potential offenders and also discouraged local councils from pursuing costly prosecutions.

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[47] 'The term "food" shall include every article used for food or drink by man, other than drugs or water'. 'The term "drug" shall include medicine for internal or external use'. Sale of Food and Drugs Act, 1875, s. 2.
[48] T.C.H. Hedderwick, *The Sale of Food and Drugs*, (second edition), 1900, p. 21.

Institution of Proceedings

Once the analyst had completed his analysis and found the article to be adulterated, he issued his certificate to that effect. The 1875 Act determined that 'the person causing the analysis to be made' could institute proceedings.[49] While this could mean any person who had purchased the sample, in practice most proceedings were instituted by the local authority. One important omission in the 1875 Act was the absence of a time limit between the purchase of samples and the serving of a summons. As noted previously, the 1879 Sale of Food and Drugs Act Amendment Act remedied this to some extent by requiring that, in the case of perishable articles a summons be served within twenty-eight days from the time the article was purchased, for other items a summons was to be served 'within a reasonable time'.[50] As a result, a summons for non-perishable items could take months by which time those awaiting trial may well have committed further adulteration offences.[51]

Courts

All prosecutions for adulteration offences commenced in a magistrates' court. These courts could be petty sessions, usually presided over by one or two magistrates, or in towns and cities 'police courts', as they were commonly known, presided over by stipendiary magistrates. Appeals could also be referred

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[49] Sale of Food and Drugs Act, 1875, s. 20.
[50] Sale of Food and Drugs Act Amendment Act, 1879, s.10.
[51] The Sale of Food and Drugs Act, 1899 remedied this by stipulating that a summons be served within twenty-eight days for *all* samples, not just perishables. s.19.

to Quarter Sessions, held four times a year in counties and larger towns and presided over by a bench of magistrates.[52] Occasionally, disputed adulteration cases were referred to the High Court. During the hearings of the Select Committee on Food Products Adulteration in 1894, it was noted that from 1875 until the time of the Select Committee, the number of cases referred in this way had been relatively few in number, 'between 60 and 70'. It is interesting to note that a number of these cases concerned the selling of 'mixtures' and illustrate the confusion that existed over this aspect of the legislation.[53]

'Expert Witnessing'

Because many adulteration cases were vigorously defended, it was vital that analysts were able to stand up to cross-examination and defend their analyses. However, unlike physicians, who were often required to act as 'expert witnesses' for criminal cases, few analysts had any experience of court proceedings or giving expert evidence.[54] As *The Analyst* noted in 1877, 'Analysts, as a rule, know very little if anything of the prosecutions, and it is better that they should not'.[55] As more and more analysts became involved in the prosecution process the SPA, through the pages of *The Analyst,* did much to ensure that analysts were better prepared for the courtroom by publishing details of cases concerning adulteration, and by providing a platform where legal issues could be discussed.

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[52] John B. Saunders, *Mozley and Whiteley's Law Dictionary,* 1977, p. 265. J.H. Baker *An Introduction to English Legal History.* 1990, p. 30. Emsley,1991, p. 12. Emsley, 1996, p. 14.
[53] *Select Committee on Food Products Adulteration*, 1894, (253) XII, Q. 18. These cases are to be found at Appendix no. 6 of this Report, p. 224.
[54] Hamlin, 1986, p. 489.
[55] *The Analyst*, **2**, (13) 1877, p. 9.

The increasing involvement of public analysts in the prosecution process confirms Christopher Hamlin's observations that the late-nineteenth century 'was an heroic age for the expansion of science into areas of public affairs, education and industry where its authority had hitherto carried little weight'.[56] Scientific and technological developments resulting from the Industrial Revolution meant there was increasing demand for an 'expert' opinion. The law courts were hearing numerous patent cases involving major inventions, while parliamentary sessions were increasingly dominated by private bills on technical matters such as gas, electricity and water supplies and railway construction, as well as public health issues such as, sewage, pollution and food adulteration.[57] A number of high profile debates, such as that concerning arsenic in wallpaper, together with sensational trials, most notably that of the poisoner William Palmer in 1856, raised issues on the appropriateness of expert witnessing. As Hamlin notes, in the Palmer trial there was as much concern about the competence of the prosecution's expert chemist, Dr Taylor, as there was about 'Palmer's guilt or innocence'.[58]

Some public analysts openly admitted that articles were certified as genuine, when in fact they were not, in order to avoid embarrassing confrontations with the Excise Chemists.[59] As a result, the public came to question the value of 'expert' testimony. As Tal Golan notes, there were repeated calls from men of science that the English legal system reform its procedures and employ a

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[56] Hamlin, 1986, p. 488.
[57] Hamlin, 1986, p. 489.
[58] Hamlin, 1986, p. 489.
[59] Evidence of Mr Embrey, Public Analyst for the County and City of Gloucester, *Select Committee on Food Products Adulteration*, 1894, (253) XII, Q. 1436.

scientific expert independent of either party. This was not accepted by the legal profession who considered such reforms as 'remedies far worse than the disease'.[60] As a result, courtroom disagreements continued. This did nothing to enhance the image of the scientific 'expert' who, according to Robert Angus Smith, the Chief Alkali Inspector, was already viewed by many in the legal profession as an 'inferior personage'.[61] Meanwhile many judges, juries and magistrates, faced with conflicting 'expert' testimony were expected to deliver judgements, despite being ignorant of the technical facts, or fully appreciating the issues involved.

Problems with Analysts' Certificates in Prosecutions

Analysts frequently expressed concern that their certificates could be challenged in court by another certificate from so called 'experts' who acted on behalf of the defence. Despite the fact that many of these 'experts' had little or no training in chemical analysis, their certificates were often accepted by magistrates with the result that defendants were acquitted. There was also another loophole in the law concerning the analyst's certificate that was often exploited by defence lawyers. The certificate of the analyst was only evidence if the analyst himself was *not* in court. If the analyst was called by either party, then his certificate was not counted as evidence. In some cases where a certificate had been submitted the defence would request the presence of the analyst at the hearing, but fail to call him into court to give evidence. As the analyst had technically been present

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[60] Golan, 1999, pp. 22 - 23.
[61] Robert Angus Smith, 'Science in our Courts of Law', *Journal of the Society of Arts*, II. January 1860, p.141.

at the court his certificate was not used as evidence. As a result cases were often adjourned or dismissed.[62] Since the analyst's certificate was accepted as *prima facie* evidence unless the defendant required the analyst to be present, it was therefore essential that this certificate was completed correctly. Many prosecutions failed because defence lawyers could point to certain technicalities in the certificate that had not been adhered to. In some cases, analysts failed to state that an analysis had been carried out by an assistant and not by themselves. In others, the analyst's opinion that samples were merely 'fraudulent' or 'harmful' could invalidate a certificate as he was required to give precise details of any adulteration found. In some cases analysts were vague when stating the percentage of adulteration. In 1896, an analyst issued a certificate that stated a sample of milk contained 'five per cent of added water'. This certificate was deemed to be insufficient because 'the quantities and distinction of the constituent parts and the percentages should have been stated'.[63]

Other Courtroom Issues

While the absence of accepted standards made courtroom disputes more likely, analysts were also being presented with new and ingenious forms of adulteration that often challenged their analytical skills and also made disagreements in court more likely. Such was the skill of the adulterator that new forms of adulteration were appearing all the time. The adulterator usually worked in secret, while the

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[62] Evidence of Otto Hehner, *Select Committee on Food Products Adulteration*, 1896, (288) IX, Q. 68.
[63] Hedderwick, 1900, p. 54.

competence of the analyst in discovering these adulterations was open to the scrutiny of the scientific world and the public. In 1890, the analyst for Kent noted how this gave rise 'to a perpetual conflict between the falsifier on the one hand and the public analyst on the other'. This resulted in 'an everlasting see-saw of attack and defence' which made the task of the analyst 'more onerous and more exacting'.[64]

Many courtroom disputes centred on anomalies in the 1875 Act, especially over the issue of 'prejudice' and the selling of 'mixtures'. Both issues, discussed in previous chapters, caused a great deal of confusion and many adulteration cases which came to court could not be substantiated simply because of uncertainties about the meaning of these two terms.

The 'Court of Reference' at Somerset House

Once cases had reached the courts, if there was disagreement about the results of an analysis, either party could request that samples be submitted to chemists at the Inland Revenue Laboratory at Somerset House. Under the terms of the 1875 Act, this department was to act as a 'court of reference' to settle cases of disputed analysis. Once chemists at Somerset House had completed their analysis, a certificate indicating their results would be issued and submitted to the court.

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[64] Report from the Public Analyst for Kent. *Twenty-first Annual Report of the Local Government Board*, 1891-92, (C.6745) XXXVIII, p. cxlii.

The setting up of a 'court of reference' staffed by chemists of the Excise Department had been opposed by many public analysts who were critical of the professional competence of the chemists in this government department. As discussed in chapter three, while public analysts accepted that the Excise Department had over many years gained a considerable amount of experience testing for adulterants in excisable goods such as tobacco and spirits, they considered that this experience did not extend to the wide range of goods officers might be asked to examine under the provisions of the 1875 Act. As a result, many adulteration cases referred to the Excise Chemists resulted in bitter disputes between the two parties over issues of professional competence and the procedures for analysis — disputes often exacerbated by the lack of official standards.

The very first reference case submitted to the Laboratory in 1876 hinted at the problems to come; it concerned the adulteration of butter. As with other food items, there was no official standard for this product.[65] A London grocer charged with selling adulterated butter had requested a second opinion from the Excise Laboratory after the public analyst, Dr Muter, alleged the butter to be adulterated. A portion was sent to Somerset House, where James Bell certified that it was pure butter. Two witnesses confirmed Dr Muter's analysis and one confirmed Bell's. The matter was not resolved and the case dismissed. Commenting on this

[65] It was not until 1902 that the Board of Agriculture issued some guidelines on butter composition. The Board of Agriculture, Sale of Butter Regulations, 1902. Bell, Scrivener and Lloyd, p.158.

case, *The Lancet*, always strongly opposed to the idea of a reference body, noted that such cases 'shake the public confidence' in the new system.[66] Another problem for public analysts was that while the certificate of the Somerset House Chemists was not seen as conclusive evidence, among the legal profession it was very influential.[67] As a result, the Excise Chemists usually emerged as the more authoritative professionals. As Ingeborg Paulus notes, this did nothing to improve the general image of public analysts. As court hearings were always reported fully in the press, 'the faults of the system were clearly *visible* in the courts through disputed analysts' certificates'. Combined with the erroneous impression given in the trade press, that analysts were responsible for instigating prosecutions, they 'emerged as double-failures and hence were saddled with the full blame for the faulty working of the Act'.[68]

These observations are substantiated by a number of unfortunate comments made by Otto Hehner to the Select Committee on Food Products Adulteration in 1896. Hehner, who held a number of posts as public analyst, was a well-respected chemist. For a number of years, he had been one of the Honorary Secretaries of the SPA and was also a past President. He was also an examiner to the Institute of Chemistry and a Member of the Council of the Chemical Society. It was therefore somewhat surprising to hear him admit that an analyst, in order to protect his reputation and not be brought into conflict with the Excise Chemists, would often 'shape his course' according to Somerset House, even

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[66] *The Lancet* **1**, January 1876, p.147.
[67] Bell, Scrivener and Lloyd, 1903. Referring to the Somerset House certificate these authors, who were all barristers, note 'The Act does not make the certificate conclusive, although, as a matter of practice, it naturally carries very great weight'. p. 66.
[68] Paulus, 1974, p. 34.

when he knew he was right. This was especially the case when samples had been kept for a considerable amount of time before being sent to the Excise Chemists:

> I am ashamed to have to admit it, but in my own practice for many years when I have to analyse a sample for a private individual trader, I give him an honest opinion as to the nature of the article to be analysed, while if the same article reaches me from an inspector, I have to consider the question: What is my position when this thing goes, after it is six weeks old, to the public authority, Somerset House, what will they say; and I have to shape my course accordingly. They probably pass that which I have previously condemned, as genuine.[69]

As Hehner went on to say, many analysts passed a 'considerable number of samples as pure, which they think are adulterated' because they were afraid of being brought into 'contact or collision' with Somerset House.[70] This view was supported in 1894 by George Embrey, Public Analyst for Gloucester, when giving evidence to the Select Committee. Embrey indicated that it was 'almost ruin' for a public analyst to have the result of his analysis contradicted by Somerset House. In some cases where this happened and 'the man was not

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[69] Evidence of Otto Hehner, *Select Committee on Food Products Adulteration,* 1896, (288) IX, Qs. 177-178.
[70] Evidence of Otto Hehner, *Select Committee on Food Products Adulteration,* 1896, (288) IX, Q.180.

particularly strong', it was likely he would lose his job.[71] Not surprisingly, this issue caused a great deal of concern among public analysts and a number of letters on the issue appeared in *The Times*. In one such letter in 1882, Alexander Wynter Blyth, analyst for Marylebone and the county of Devon, felt that public disagreements between the chemists at Somerset House and public analysts, exacerbated by the lack of official standards, were having an adverse effect on prosecutions for adulteration. Analysts were so concerned about appearing incompetent in court that many were only issuing certificates in 'flagrant cases' of adulteration. As a result, according to Blyth, in parts of the metropolis 'there never at any time was more adulteration, and adulteration which is, in the present state of things perfectly safe — I may say almost licensed'.[72]

Another problem for public analysts was the fact that some certificates issued by the Excise Chemists on disputed analyses were unclear. Wording such as 'unable to affirm', for instance that water had been added to milk, meant that magistrates invariably read into this that the certificate of the public analyst was wrong. As a result, the trade increasingly felt they had an ally in the Excise Chemists.[73] The trade press did much to re-enforce this impression as an 1876 article in *The Grocer* entitled 'The Analysts Again' indicated. This concerned a dispute between a public analyst and Somerset House over the analysis of a butter sample. The article serves to illustrate how journals such as *The Grocer*

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[71] *Select Committee on Food Products Adulteration,* 1894, (253) XII, Qs.1436-7.
[72] 'The Public Analysts and the Inland Revenue Chemists', Letter to the Editor from A. Wynter Blyth, *The Times*, 22 June 1882, p. 4, col. f.
[73] In May 1893 this concern was expressed by Bernard Dyer and Robert Davies, Honorary Secretaries of the SPA, in a statement sent to the Treasury and the Secretary of the Committee to Enquire into Laboratory Arrangements of Customs and Inland Revenue Departments. TNA, DSIR 26/133.

seized on opportunities to present public analysts as the incompetent party whenever there was a dispute between them and the Excise Chemists.[74] Such comments were not limited to the trade press; many local newspapers also expressed concerns about the system of reference and the role of public analysts. An indication as to how the local press viewed disputes between public analysts and the Excise Chemists can be gauged by the title of an article contained in *The Beckenham Journal* in July 1887. Entitled 'The Government Chemists Against the County Analyst', the report contained details of a dispute over milk analysis between these two parties.[75] The involvement of the local press in the issue was important as it was through this medium that trade discontent about unfair analytical decisions, together with council concerns about the costs of applying the food acts, were highlighted at local level. A case reported in the *Bedford Bee* in 1879 illustrates this point. In this case a Bedford milk-seller was charged with adulteration. On appeal to Somerset House this was certified not to be the case. As the paper noted 'the analysis by the borough analyst Dr Prior was proved to have been not only an incorrect analysis but a serious hardship to an innocent man'. Discussing this 'miserable bungle', the paper went on to question whether ratepayers in Bedford were getting value for the £50 per year paid to the analyst when 'we have to pay the cost of this blundering prosecution as well'.[76]

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[74] 'The Analysts Again', *The Grocer* **29**, 5 February 1876, p.141.
[75] 'The Government Chemists Against the County Analyst', *The Beckenham Journal*, 30 July 1887, press cutting from archive file TNA, DSIR 26/247.
[76] *The Bedford Bee*, 3 September 1879, press cutting from archive file TNA, DSIR 26/247.

The general tendency for the Somerset House chemists to favour the trader devalued their role as impartial referees. A statement in 1893 from Bernard Dyer and Robert Davies, Honorary Secretaries of the SPA, expressed their concern on this issue:

> In fact it is notorious that tradesmen have looked upon the Chemical Officers of Somerset House as their best friends and numerous vendors of adulterated goods have made a practice of appealing to Somerset House, whenever a certificate was issued against them as the surest means of escaping the just punishment for this offence.[77]

Most public analysts considered that the system of referral, as outlined by the 1875 Act, was seriously flawed and in urgent need of re-structuring. At a meeting of the SPA in 1893 this point was forcefully illustrated by Charles Cassal, a member of the editorial committee of *The Analyst* and a future Honorary Secretary of the Society.[78] Cassal considered that from every point of view, local authority, public analysts, inspectors and magistrates, the reference system 'was objectionable'. No doubt referring to Bell's investigation into milk standards, Cassal alleged that the Excise Chemists had been guilty of 'much-maligned standard-fixing' and this had been done in a manner 'which was quite unscientific'. Cassal considered that most public analysts were 'strongly of the

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[77] Statement sent by Robert Davies and Bernard Dyer, Society of Public Analysts, to C.L. Davies, The Treasury, Secretary of the Committee to Enquire into Laboratory Arrangements of Customs and Inland Revenue, 24 July 1893, following p. 81, Laboratory Correspondence, TNA, DSIR 26/133.

[78] Dyer and Mitchell, 1932, p. 35.

opinion' that the Excise Chemists 'should have nothing whatever to do with the Sale of Food and Drugs Act'.[79]

Such forceful views had been expressed many times following the introduction of the reference system and they did nothing to enhance the value of the process or promote the professional integrity of either party. However, Dyer and Mitchell, writing in 1932, felt that to be completely fair to the Excise Chemists it had to be understood that the Somerset House Laboratory at the time of the 1875 legislation, was completely unlike the independent Government Laboratory of later years. It was simply a branch of the Inland Revenue with its officers:

> ... more or less swathed in an entanglement of red tape, which was, unfortunately, knotted by the legal advisors of the department in such a way as to limit their freedom of intercourse with those whom they might otherwise have regarded as their outside colleagues.[80]

Despite earlier hostilities, relations between the two sides gradually improved during the 1890s, due in part to the retirement of James Bell and the appointment of a new Principal, Thomas Edward Thorpe in 1894. Unlike his predecessor Thorpe was prepared to address the SPA and, at the Annual Dinner of the Society in 1896, gave an address in which he noted that for the two sides the 'end was the same — the welfare of the community—and that end could be

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[79] *The Analyst*, **18**, (April) 1893, pp.111-113.
[80] Dyer and Mitchell, p.16.

most quickly and most certainly assured by friendly and harmonious co-operation'.[81] In 1900 this co-operation was demonstrated when the SPA appointed a committee to confer with the chemists at the Government Laboratory on disputes arising from certain aspects of the Sale of Food and Drugs Act, 1899.[82]

Reference Cases

It is easy to get caught up in the rhetoric that passed between public analysts and the Excise Chemists following the introduction of the 1875 Act. However, on a factual level a more reasoned analysis as to the value of the reference system may be made by examining the actual number of cases referred to the Laboratory. Between 1875 and 1895, 678 cases were referred to Somerset House of which 474, or roughly two-thirds agreed with the public analyst's findings. Milk accounted for 411 of these and of this number, 311 agreed with the analysts.[83] However, there were large yearly variations in these numbers. In 1878, twenty-four samples were referred and only five results differed from that of the public analyst. In 1885, the number of referred cases had risen to 51, but of this number twenty-three differed from that of the analyst. In 1890, the number of referred cases had dropped to twenty-six, of which just eight disagreed with the results of the analyst. In the following year, numbers more than doubled with

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[81] *The Analyst*, **21**, (February) 1896, pp. 36 - 43, p.43.
[82] Hammond and Egan, p.157.
[83] Records containing information of reference cases are held at TNA, DSIR 26/120-124 and IR 15. One notable feature of the DSIR records is that, contrary to frequent complaints by public analysts that the Excise Chemists kept their methods 'secret', these records contain a considerable amount of detail as to the methods of analysis used by chemists at Somerset House. Sale of Food and Drugs Act, 1875. Reference Cases, TNA, DSIR 26/123.

sixty-eight cases referred of which seventeen disputed the results of the public analyst. While James Bell, Principal of the Laboratory, made occasional observations at times when submissions were low, he offered no explanation as to why such variations existed.[84]

As these figures demonstrate, the actual number of cases where the two sides were in dispute was not large. Unfortunately, in cases where disagreement did occur, these often attracted a great deal of publicity that was damaging to the professional reputation of both public analysts and the Excise Chemists. Unseemly disputes and allegations of professional incompetence also devalued the system of reference. Defendants in adulteration cases knew this and used it to their advantage. Requesting a second analysis from Somerset House created a possibility that the chemists in this department would dispute the analysis given by the public analyst, making it likely that a court case would be dismissed. As a result, in the early years at least, the reference system, far from contributing often became an obstacle to effective implementation of the 1875 Act.

Fines for Adulteration Offences

Even if the reference system had been more effective, adulteration was unlikely to be discouraged unless fines imposed on offenders were sufficient to have some deterrent effect. This was certainly not the case and analysts and others

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[84] *Reports of the Commissioners of Her Majesty's Inland Revenue, Twenty-first Report*, 1878, (C. 2158) XXVI, *Twenty-eighth Report,* 1885, (C. 4474) XXII, *Thirty-third Report* 1890, (C. 6187) XXVI, *Thirty-fourth Report*, 1891, (C. 6537) XXVI.

repeatedly expressed concern that the low fines imposed by magistrates did nothing to discourage potential or persistent offenders.

Various penalties had been determined in the 1875 Act, with the level varying according to the type of offence committed. For adulterating an article so as to make it 'injurious to health', the maximum penalty for a first offence was £50, with a six month term of imprisonment for a subsequent offence. However, it quickly became apparent that convictions under this section would be difficult to obtain for the simple reason that medical and scientific men frequently disagreed on ways of proving that articles were 'injurious to health'. For offences such as selling articles 'not of the nature, substance, and quality of the article demanded', the maximum penalty was £20.[85] With magistrates content in many cases to impose fines of just a few shillings, these penalties were unlikely to have any deterrent effect. Public analysts in particular complained that low fines negated much of the good work done by them.[86] As Ingeborg Paulus has noted, the 'food and drug primary law-enforcers' were increasingly frustrated to have their efforts 'undermined' by 'secondary law-enforcers'.[87]

The LGB was also well aware of this issue and from the mid-1880s drew attention to the problem of low penalties. Prior to this, information from local authorities on prosecution rates and the level of fines imposed for adulteration

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[85] Sale of Food and Drugs Act, 1875, s.3, s.6. Bell, Scrivener and Lloyd, 1903, p. 5.
[86] In 1882 the analyst for the City of London drew attention to this fact, noting that in many cases it was pointless for analysts to assist in the prosecution process owing to the leniency of magistrates in setting penalties. *Twelfth Annual Report of the Local Government Board,* 1882-1883, (C. 3778) XXVIII, p. cix.
[87] Paulus, 1974, p. 110.

offences is somewhat sketchy. While the 1875 Act required local authorities to submit public analysts' quarterly reports to the LGB detailing the work done, in terms of number of samples analysed and the results, no information was required on the number of prosecutions instituted or convictions obtained. A few areas did supply this information, Essex for example gave information on sample collection and prosecutions from 1882, while Middlesex included this information from 1884.[88]

In 1888, the LGB issued a circular to local authorities requesting that information on all legal proceedings, the outcome of these and penalties imposed, be included when annual returns were submitted.[89] Subsequently there was a gradual increase in the number of districts which submitted this information to the Board, although some continued to ignore this request until the end of the century. In 1889, 101 districts informed the Board of the number of prosecutions in their area. By 1892 this information was received from 159 districts out of a possible 235.[90] After 1888, it is therefore possible to have a more accurate picture of prosecutions, convictions and the level of fines imposed.

Despite the fact that the LGB continually admonished magistrates for imposing low fines, by the mid-1890s the situation showed little change. In the LGB Annual Report for 1896-1897 there was a detailed analysis of prosecutions and fines. Throughout the country, 4,202 samples were found to be adulterated but in only

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[88] *Twelfth Annual Report of the Local Government Board,* 1882-1883, (C. 3778) XXVIII, *Fifteenth Annual Report of the Local Government Board,* 1885-1886, (C. 4844) XXXI.
[89] *Seventeenth Annual Report of the Local Government Board,* 1887-1888, (C. 5526) XLIX.
[90] *Twenty-first Annual Report of the Local Government Board,* 1891-1892, (C. 6745) XXXVIII.

2,808 cases were proceedings instituted. Fines were imposed in 2,349 of those cases with penalties amounting to £3,014 2s 1d, excluding costs. The average penalty was £1 10s 9d, while the previous year it had been £1 15s 9d. Over a third of the fines were ten shillings or under, 177 being less than five shillings, including 82 at one shilling, and seventeen at six pence. One trader who had three previous convictions was, on the fourth, fined just six pence with two shillings costs.[91]

Figures for adulteration published annually by the LGB, always showed higher rates of milk adulteration than the average adulteration rate. The LGB felt that this discrepancy was caused primarily by magistrates issuing low fines. These were no deterrent to unscrupulous milkmen who could easily offset fines against profits made from milk adulteration; profits which the Board considered to be 'enormous'.[92] As the social investigator, Charles Booth, would note, illicit activities by milkmen were so common that employers were forced to 'wink' at their dishonesty.[93] The recognition that many milkmen were systematically dishonest was often taken into account by employers when fixing wages. Low wages for milkmen simply encouraged further adulteration and the cycle of fraud continued.[94] By the 1890s, an average wage for a retail milkman in London was between 20 and 30 shillings per week. There was also a bonus of between two shillings and four shillings for each new customer who would guarantee to take a

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[91] *Twenty-sixth Annual Report of the Local Government Board*, 1896-1897, (C. 8583) XXXVI, p.cxxxix.
[92] *Twelfth Annual Report of the Local Government Board*, 1882-1883, (C. 3778) XXVIII, p.cix
[93] Charles Booth, *Life and Labour of the People of London*, Second Series: Industry 3, 1903, p. 170.
[94] D. Hay & F. Snyder, (eds), *Policing and Prosecution in Britain 1750-1850,* 1989, p. 411.

certain amount of milk per day.[95] With the large quantity of milk sold, many milkmen could quite happily afford to pay the low fines, continue adulterating and still make substantial profits. In 1878, a milkman from Barrow who was caught adding water to milk confirmed this by claiming that he could make between two and three pounds extra each week by the practice.[96] In one case in 1880, a milkman who was prosecuted had seven previous convictions and seemed untroubled that this had cost him over £70 in fines.[97]

While fines for adulteration offences were in most cases very low, magistrates sometimes proposed a custodial sentence as an alternative to the fine. For example, at Clerkenwell Police Court in London in 1876, four persons were convicted of milk adulteration and received fines varying between ten shillings and £3. However, in each case if this payment was not made a term of imprisonment varying between seven days and one month was to be imposed.[98] Milkmen in particular often made rather creative excuses when cases came to court. In 1876 a London milkman accused of adulteration claimed that his milk had been watered only because he had put ice into it 'to preserve it'. He was fined £5 with costs of two shillings.[99] On rare occasions, magistrates did impose heavy fines. In 1876 a baker charged with adulterating bread was fined £25, but this level of fine for an adulteration offence was very unusual.[100] Often there

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[95] Charles Booth, 1903, p.173. This compared favourably with evidence from the 1885 'Royal Commission on the Housing of the Working Class' which heard evidence that 'a good average wage' in London in 1885 was about twenty shillings per week. (First Report) 1885, (C. 4402) XXX, p. 16.
[96] *The Analyst*, **2,** (22)1878, p. 185.
[97] *Tenth Annual Report of the Local Government Board* 1880-1881, (C. 2982) XLVI, p.lxxxix.
[98] *The Analyst*, **1** (2), 1876, p. 34.
[99] *The Analyst,* **1**, (6), 1876, p. 117.
[100] *The Analyst*, **1,** (6), 1876, p. 117.

were inconsistencies in sentencing policy and, for the same offence sentences could vary considerably from bench to bench.

Magistrates

With many magistrates often involved in trade themselves, it was unlikely that they would impose severe penalties for adulteration offences on their fellow traders. Peter Bartrip gives an apt quote from Henriques on this situation; giving magistrates 'a dominant role in the enforcement process "resembled the recruitment of leading bandits to a police force" '.[101] While Henriques is referring specifically to the Factory Inspectorate these comments could equally be applied to magistrates dealing with adulteration offences. Ingeborg Paulus suggests that the imposition of low penalties by magistrates, and their general sympathy towards traders, might have come about because many magistrates were of the same social status as some of those appearing before them.[102] In a modern day context Bridget Hutter has also expressed a similar view when discussing environmental health offenders:

> ...members of the council or the bench who are businessmen themselves may consciously or unconsciously have sympathy

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[101] U.R.Q. Henriques, 'An Early Factory Inspector: James Stuart of Dunearn', *Scottish Historical Review,* **L,** 1971,18-46, p.19, quoted in Peter W.J. Bartrip and P.T. Fenn 'The Conventionalization of Factory Crime – A Re-assessment', *International Journal of the Sociology of Law,* **8**,1980, p. 177.

[102] As Ingeborg Paulus notes '...without specific research we have no means of knowing why the magistrates were so inconsistent in their sentencing of food adulterators. However, the general identification of magistrates with high-status offenders could well be one of the reasons'. Paulus, 1974, p. 110.

> for an offender who has committed an offence which they believe they could easily have committed themselves.[103]

Roger Hood has observed that magistrates' policies are influenced by a great number of factors and it may not simply be a question of their being of equal status with the offender. For example, the nature of the offence and the attitude of the justices to that particular offence are important. The composition of the bench and the structure and needs of the community also have to be taken into account.[104]

Referring to modern day society, Hazel Croall agrees with this view and notes that the needs of the local community are important considerations when magistrates determine sentencing policy. When dealing with consumer cases, it seems every effort will be made by magistrates to avoid giving an area a 'bad name'.[105] This local concern was equally applicable during the nineteenth century. The Select Committee on Food Products Adulteration heard in 1896 how local authorities in 'watering places' suppressed information on adulteration offences committed by local traders, fearing this would discourage visitors.[106]

Despite continuing concerns about low fines for adulteration offences and numerous suggestions by public analysts and the LGB as to how this could be

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[103] Hutter, 1988, p. 74.
[104] Roger Hood, *Sentencing in Magistrates' Courts*, 1969, pp. 77-78.
[105] Hazel Croall observes that '...magistrates dealing with consumer cases have voiced fears that publicity surrounding the sale of short weight drinks or food hygiene offences might deter tourists and give the area a "bad name" '. Hazel Croall, *Understanding white collar crime,* 2001, p. 67
[106] Evidence of Otto Hehner, *Select Committee on Food Products Adulteration,* 1896, (288) IX, Q. 925

remedied, such as an increase in custodial sentences, or the imposition of a minimum set fine, magistrates continued to impose inappropriate fines. This had an important effect on the adulteration campaign as Ingeborg Paulus notes:

> The literature available leaves no doubt that, *had* magistrates been *willing* to use the maximum provisions of the law available to them, food adulteration would have disappeared as a 'social problem' much sooner than it actually did.[107]

While the imposition of low fines by magistrates was an important constraint on the effective working of the 1875 Act, another difficulty was the fact that some magistrates appeared to disregard the analyst's certificate. The Act required public analysts to analyse samples submitted to them and to certify them genuine or not. This certificate was *prima facie* evidence for the prosecution and there was no need for the analyst to appear in court unless the defendant disputed the certificate. Despite this, some magistrates either refused to accept the analyst's certificate as evidence or, if he attended, evidence from the analyst himself.

Another loophole concerned the fact that the analyst's certificate was *sufficient* but not *conclusive* evidence, and when assessing evidence magistrates were entitled to use any special knowledge they might have. A case heard in 1895 illustrated this point. A Gosport grocer had sold a packet of cocoa containing 80

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[107] Paulus, p. 124.

per cent starch and sugar. The magistrates, all retired naval officers, felt they had some experience of cocoa as it formed one of the regular rations aboard ship. Using their 'knowledge' (it is not clear what this was) and without hearing any evidence as to the composition of cocoa sold commercially, they came to the conclusion that the starch and sugar had not been added fraudulently. They dismissed the case despite the certificate of the analyst certifying that the cocoa was adulterated.[108] Such action must have been extremely frustrating for public analysts who found their professional judgement questioned by people with little or no expertise.

Some indication that the judiciary considered adulteration offences to be less important than other cases of fraud, particularly revenue fraud, can be seen from a government report published in 1888. This showed the number of convictions in 73 English boroughs, each having a population of under 20,000 and a separate police force. The survey was for a twelve month period between 1886 and 1887. The Report listed convictions under the Food and Drugs Act, the Weights and Measures Act and the Licensing Act. From the 73 boroughs the total number of convictions was 3,565. Of these 3,518 were for offences under the Licensing Act, nineteen were for offences against the Weights and Measures Act, while just 28 were for offences under the Food and Drugs Act.[109] These figures seemed to confirm that cheating the Revenue was viewed far more seriously than cheating the public, a view later expressed by Otto Hehner, former

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[108] Bell, Scrivener and Lloyd, 1903, p. 26.
[109] Food and Drugs Act, etc, (Convictions) *Accounts and Papers,* 1888, (210) LXXXII, p. 161.

President of the SPA, when giving evidence to the Select Committee on Food Products Adulteration in 1896:

> Whenever the Excise prosecute a publican for watering beer, say, for adding two gallons of water to a 36-gallon barrel of beer, which is a small percentage, fines of £20 or £50 are imposed. When similar proceedings are taken under the Food Act against these very publicans for adding a much larger proportion of water to gin or whisky, they are probably fined a shilling or five shillings.[110]

As Hehner went on to note, when the Treasury prosecuted they came with an 'array of solicitors (and counsel if necessary)'. All this 'looks much more formidable to benches of magistrates than it does if only a sanitary inspector comes and puts the matter before them'. As he concluded, not only were such small fines 'ridiculous' but they actively discouraged 'local authorities to prosecute at all'.[111]

Adulteration as White-collar Crime

Another reason for the imposition of low fines by magistrates was the way adulteration was perceived. It was not seen as 'real' crime and in present day

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[110] Evidence of Otto Hehner, *Select Committee on Food Products Adulteration,* 1896, (288) IX, Q. 9.
[111] Evidence of Otto Hehner, *Select Committee on Food products Adulteration,* 1896, (288) IX, Qs. 9 -10.

society would be classified as a 'white-collar' crime. This type of crime has been defined by Hazel Croall as 'an abuse of a legitimate occupational role which is regulated by law' and is seen as a question of 'bending the rules' rather than one of deliberate criminal intent.[112] Undoubtedly this is the way adulteration was viewed by many in the trade as well as by many magistrates. By imposing low fines, magistrates confirmed the view that adulteration was not a 'criminal' offence in the accepted sense. This view is supported by Croall who notes that the distinguishing feature between 'white-collar crimes and other crimes' is to be found 'in the way in which they are criminalized, policed and punished...'.[113]

Those in the business community regarded adulteration as 'normal' trade practice and did not see themselves as criminals in any sense. Most traders felt they were forced into adulteration by the pressure of competition. The lenient attitude of magistrates towards offenders, and the imposition of low fines, no doubt also reinforced in the mind of the public that adulteration was an acceptable practice. As John Burnett has observed, as far as adulteration was concerned the average law-breaker was often the epitome of Victorian middle-class respectability and morality:

> ...little more than a century ago, an important section of the English middle class – the class which had taken upon itself the moral leadership of society, and the task of reforming the vices alike of the aristocracy and the lower orders – not only practised

[112] Croall, 2001, p. 17.
[113] Croall, 2001, p. 102.

> adulteration but accepted it as a normal agency of commerce. Business morality was never lower than at the time when Christian observance was at its most ostentatious...[114]

Local Councils and the Prosecution Process

An important consideration that determined whether adulteration offenders would be prosecuted was cost. Councils were unwilling to spend rate-payers' money on what many considered to be an unimportant matter. When pursuing prosecutions for adulteration, councils were often out of pocket. In 1900, Birmingham retailers were prosecuted for selling dyed yellow sugar crystals as Demerara sugar. While the Corporation provided evidence that the two articles were quite distinct and sold wholesale at different prices, a number of grocers giving evidence for the defence stated that no such distinction was made in the retail trade. As a result the cases were dismissed having cost the Corporation £135.[115] Records from the county of Middlesex indicate that in the 1890s, the cost of administering the adulteration acts and bringing cases to court far exceeded the amount recouped in fines. For 1893 the costs amounted to £824 15s 9d. This figure included the payments for analysts, inspectors and assistants as well as payments for individual sample analysis. It also included fees of £56 10s 0d paid to inspectors for convictions obtained. However, with 113 convictions for adulteration offences the amount recouped in fines was just £163 13s 0d. By 1897 total costs had risen to £1,652 7s 8d while the amount recouped in fines remained low at £274

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[114] John Burnett,1989, p.101.
[115] Liverseege, 1932, p. 4.

"JOHN, have you sanded the sugar and watered the milk and molasses?"
"Yes, sir."
"Then you may come in to prayers."

***The Picture Magazine*, 2, 1893.**

An illustration of what John Burnett refers to as the 'strange double morality of the day...'. Burnett, 1989, p.101.

17s 8d.[116] Addressing the SPA in 1893, Otto Hehner considered cost to be one of the main reasons why the 1875 Act was not enforced by some local authorities. As he noted, when magistrates imposed such low fines, local authorities, who had gone through the 'heavy machinery' of bringing the case to court, thought it not worth their while 'to work the Acts any more' when fines of one shilling were imposed.[117]

The business interests of council members, together with financial considerations, clearly influenced the number of prosecutions for adulteration offences a local authority might institute, and were therefore a major constraint on the successful implementation of the 1875 Act. As Paulus has observed:

> Especially in smaller communities, where local authorities were composed mainly of businessmen, the law was simply not enforced, and even where enforcement personnel had been appointed because of expressed community sentiments, no prosecutions took place, because the local authorities were loath to offend their important members and to spend community monies.[118]

As discussed in earlier chapters, as the nineteenth century progressed local councils were increasingly made up of members with business interests. These members were clearly reluctant to pursue prosecutions for adulteration offences

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[116] LMA, *County Council of Middlesex Reports*, 1897 (2) Appendix IV, Meeting of the General Purposes Committee 27 May 1897, p. 35.
[117] Otto Hehner, 'Proceedings of the Society of Public Analysts', *The Analyst* (supplement) **18**, 1893, pp. 97-116, p. 107.
[118] Paulus, p. 96.

against their fellow traders. They were also unlikely to commit rate-payers' money to this cause when the action of magistrates made it unlikely that costs could be recouped. As a result the judicial process, which should have been an effective weapon in the campaign to improve food quality, failed to be the deterrent many had hoped for.

LGB Figures for Prosecutions

In 1893 the LGB produced a table showing the numbers of prosecutions and convictions for various items of food and drink during the year. Not unexpectedly milk comes at the top of this table with 2,310 samples found to be adulterated. Proceedings were taken in 1,542 cases of which 1,340 resulted in conviction with fines totalling £2,914 19s 2d. The next most frequently adulterated item was butter with 794 samples. Proceedings were taken in 604 of these cases and prosecutions successful in 569, a relatively high percentage. But for other items such as cocoa, coffee and mustard, often less than half the prosecutions resulted in convictions.[119]

LGB Figures for Adulteration

While this chapter has highlighted the many problems associated with the analysis of food samples and securing convictions of adulteration offenders, the annual reports of the LGB chose to ignore many of these issues and emphasised

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[119] *Select Committee on Food Products Adulteration,* 1894, (253) XII, paper submitted by Herbert Preston-Thomas, Appendix, no.1, p.191.

instead the more positive aspects of the Act. Most of this optimism was based on figures for adulteration aggregated annually from analysts' returns and published by the Board.

Year	Samples Examined	Samples Adulterated	Percentage of Adulteration
1881	17,823	2,613	14.7
1886	23,596	2,813	11.9
1891	29,028	3,540	12.2
1896	45,555	4,202	9.2
1901	67,841	5,989	8.8

Number of Samples Analysed and Percentage Found Adulterated in England and Wales 1881-1901. Source: LGB Annual Reports.

As the table illustrates, figures showed a definite downward trend in adulteration rates providing confirmation to the LGB that the 1875 legislation had been successful. In comparison with these figures, rates for milk adulteration did not show such a notable decrease. In 1881, when general rates for adulteration were 14.7 per cent, the rate for milk adulteration was considerably higher at 19.5 per cent. In 1891 this figure had reduced with a rate for milk adulteration of 13.4 per cent although this was still higher than the general adulteration rate of 12.2 per cent. By 1901, with a general adulteration rate of 8.8 per cent milk adulteration was 11.2 per cent.[120] Many of the reasons discussed earlier in the chapter

[120] *Eleventh Annual Report of the Local Government Board* 1881-1882, (C. 3337) XXX, *Twenty-first Annual Report of the Local Government Board,* 1891-1892, (C. 6745) XXXVIII, *Thirty-first Annual Report of the Local Government Board*, 1901-1902, (Cd.1231) XXXV.

explain why milk adulteration was such a persistent problem and it would be well into the twentieth century before these rates began to show a significant downward trend.

Summary

While the above figures appear to indicate that the 1875 legislation was indeed successful, this chapter has identified further constraints affecting local implementation which suggest that official statistics may not present an entirely accurate picture of changing levels of adulteration. Public analysts were continually hampered in their role, either by restrictions imposed by employing authorities, resource related constraints or other issues, such as the lack of official standards which resulted in disputed analyses and conflicts with the Excise Chemists. There were also inconsistencies in the recording of information by public analysts. As well as these constraints, anomalies in the law, the inexperience of analysts in the courtroom and the leniency of magistrates meant that many adulteration offences went unrecorded and offenders unpunished. The apparent bias in favour of the trading community by the Excise Chemists also lends weight to this conclusion and implies that far more adulteration occurred than was recorded in official figures. In the following chapter this suggestion will be further substantiated by examining many of the difficulties which have been discussed in the preceding chapters within the context of a local study.

Chapter Six

The Implementation of the 1875 Act in Essex

So far in this thesis, many of the constraints associated with the implementation of the 1875 Sale of Food and Drugs Act have been discussed on a national basis drawing on relevant examples from all over England. This chapter takes a case-study approach to examine in detail the implementation of the Act in a particular area in order to make an assessment of the effectiveness of the legislation. By drawing together all of the issues relating to the implementation of the Act, which hitherto have been discussed separately, and seeing them in the local context, emphasises the problematic nature of the legislation. The county of Essex has been chosen as a focus for this study for several reasons. Firstly, the county's geographical situation, being in part adjacent to London, has both urban and rural components. By the mid-nineteenth century, London was already encroaching on areas of Essex. 'London over the border', as this area was known, saw unprecedented population growth during the nineteenth century.[1] Contrasting the administration of the 1875 Act in these urban areas with more rural areas of the county affords an opportunity to investigate the Act in both types of setting.

[1] A similar phrase was already being used in 1857 as an article in *Household Words* confirms, 'Londoners over the Border' *Household Words*, 12 September 1857.

The second reason for focusing on Essex is the availability of a broad range of archive material. Most importantly, records are available which show in some detail the work of the county analysts. Thomas Pooley, the analyst for Essex from 1881, was particularly diligent in recording his observations on the working of the Act. Pooley's comments, together with his quarterly returns detailing samples analysed and adulterations found, are contained in the records of the LGB. The LGB records also contain details about the appointment of inspectors and the appointment of analysts, as well as the many deliberations between the LGB and county authorities on both these issues.[2] These discussions often provide interesting contrasts between the views of the LGB and those expressed by the various local authorities within the county. Many of the local authority records, usually to be found within Local Board Minutes, mirror these discussions but as seen from a local, and in many cases somewhat parochial perspective and they provide valuable, insightful comments on the Act from 'ground level'.[3]

Archive material on police involvement in administration of the Act within Essex has also proved particularly useful, especially information on the role of Captain (later Admiral) McHardy, Chief Constable of Essex from 1840 to 1881. While McHardy was only in office for a short time after the 1875 Act was introduced, he was actively involved in its implementation during that period. These records also

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[2] Records detailing correspondence between Essex county authorities and the LGB are held at The National Archives. Records for the county of Essex are MH 30/73, MH 30/74, MH 30/75, MH 30/76 and MH 30/77, covering the period 1872 to 1897. I have been unable to locate any LGB records for Essex at The National Archives beyond this period.

[3] Material from the Archive and Local Studies Centre of the London Borough of Newham at Stratford on the activities of local boards and their involvement in the administration of adulteration legislation, has been particularly useful. Redbridge Local Studies Library (Ilford) and the Essex Record Office (ERO) at Chelmsford and Colchester have provided additional sources.

provide interesting examples of the day to day activities of police officers acting as inspectors under the Act and their role in sample collection.[4]

The chapter will commence with an introduction which aims to provide general background information about the county of Essex in the nineteenth century. It will also highlight aspects of that history that are particularly relevant to the adulteration issue. The chapter will examine the role of the police in the administration of the Act, the influence of the Chief Constable, Captain McHardy and the role of police constables acting as inspectors to collect food samples. The chapter will then discuss the early implementation of the Act within the county and the appointment of its first public analysts in 1873. It will also examine the role and influence of local bodies in the implementation of the Act and will look in some detail at the activities of the West Ham Local Board in this context. The main part of the chapter will focus on the activities of Thomas Pooley, county analyst from 1881 until 1904. His observations on the daily implementation of the Act at local level are particularly valuable, while his very detailed records permit an in-depth assessment of sample collection and analysis. This allows for some comparisons to be made about the effectiveness of the Act within the county and between Essex and the rest of the country. There will also be discussion on prosecution and conviction rates for adulteration offences within the county, illustrated by relevant examples. The chapter will conclude with a general overview of the implementation of the 1875 Act within the county of Essex in the period up to 1900.

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[4] These records are held at the ERO (Chelmsford).

The County of Essex in 1861

D.W. Coller, *The People's History of Essex*, 1861

Background

At the beginning of the nineteenth century, Essex was predominantly an agricultural county. As the century progressed, a combination of factors changed this pattern. From the 1860s, a series of bad harvests and the importation of cheap wheat and meat from abroad meant that many farms went out of business. This in turn encouraged a movement of people away from the countryside to more urban areas of the county. At the same time, increasing work opportunities and the coming of the railways resulted in an outward spread of London into rural parts of the county, an area that would become known as metropolitan Essex. By the beginning of the twentieth century, over half the population of the geographical county lived in metropolitan Essex.[5] The introduction of workmen's trains saw a spread of population into the previously rural parts of Essex such as Walthamstow, Romford and Ilford. In 1854, 6,000 people travelled daily into central London by train. By 1900 the Great Eastern Railway alone brought 19,000 into Liverpool Street by workmen's trains.[6] When the population of the county rose from 344,979 in 1841 to over a million in 1901, most of this increase took place in the metropolitan area.[7] West Ham, a largely rural area in the early- nineteenth century, had by 1891 become the tenth largest town in England.[8] This urban area of Essex provides many examples of the type of local problems that arose following the introduction of the adulteration acts.

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[5] A. C. Edwards, *A History of Essex*, (sixth edition), 2000, pp.107-109.
[6] P. J. Waller, *Town, City and Nation*, 1983, p.160.
[7] A. D. Carr, 'Victorian Essex,' in 'Essex 1066-1901' a series of pamphlets published by the Essex Record Office, 1964.
[8] *The Victoria History of the Counties of England. A History of Essex.* 'Metropolitan Essex since 1850', 1966, p. 6.

The milk trade was directly affected by the expansion of the railways. The first milk brought into London by rail in 1845 came from the Brentwood and Romford districts of Essex.[9] Essex dairy farmers would become important contributors to the expanding railway milk trade. As P.J. Atkins has observed, while many arable farmers in counties such as Essex had suffered in the agricultural depression of the late-nineteenth century, for others, this acted as an incentive to change to dairy farming and the relatively safe milk trade, and was in effect 'a "push" factor in the expansion of the country supply'.[10] Another factor that increased dairy farming within the county was the migration to the area of Scottish cattle-farmers who took up vacant farms and made a big contribution to the expanding railway milk trade.[11]

The largely agricultural eastern part of the county and the more densely populated metropolitan areas would reveal differences in adulteration trends. For most of the period following the introduction of the 1875 Act, adulteration rates were much higher in the more densely populated areas. This would seem to confirm that many of the known factors which led to an increase in adulteration, such as high density living, a transient population and the general anonymity afforded to the would-be adulterator in the urban setting, were present in this part of Essex. This large population increase was also responsible for another factor relevant to the adulteration issue, namely the great increase in the numbers of shops and shopkeepers. According to census returns, in 1851 there were 103

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[9] Atkins, 1978, p. 208.
[10] Atkins, 1978, pp. 215, 218.
[11] Waller, 1983, p.189.

shopkeepers in West Ham. By 1871, this number had risen to 320 and, by 1881, to 592.[12]

Between 1874 and 1880 during Disraeli's Conservative government, with one exception, the six Essex constituencies returned Conservative MPs. In 1878 at a Maldon by-election a Liberal MP was returned. During Gladstone's Liberal Parliament 1880-1885, Essex was again represented predominantly by Conservative members; a situation that would continue until the end of the nineteenth century. One member of note was Lord Eustace Cecil, MP for Essex (South) from 1865 until 1868 then MP for Essex (West) until he retired in 1885. Cecil frequently expressed concern about the adulteration issue and was anxious to see reforms take place. Actively involved in discussions prior to the introduction of the 1872 Act, he considered that earlier adulteration legislation had failed to address the real issues and the 1860 Act to be 'one of the most ridiculous measures that ever became law'.[13] He campaigned vigorously for the appointment of analysts to be made compulsory and was bitterly disappointed this did not become law in the 1875 Act.

By mid-century, administrative changes in local government within Essex mirrored changes occurring around the country as local government struggled to respond to the increasing needs of an expanding population. The vestry system, which was responsible for local administration, was ill-suited to coping with the increasingly complex problems brought about by such rapid change. Following

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[12] John Wesley Marriot, 'London Over the Border: A Study of West Ham During Rapid Growth 1840-1910', unpublished PhD thesis, University of Cambridge, 1984.
[13] *Hansard*, 1868-1869, March 1869, CXIV, p. 723.

the Public Health Act of 1848, local boards of health with powers to carry out specified sanitary duties were established and became the chief instruments of local government. As Anthony Wohl has noted, the establishment of local boards under the Act of 1848, was 'not in itself any guarantee that the town would now steer a new course in public health'. However, while the Act allowed local bodies to implement many sanitary duties, such as the appointment of MOHs and inspectors of nuisances, many local bodies became local boards of health with 'the same interest which governed the one governed the other'. As discussed in previous chapters, the dominant interests of many members of these local boards, be they tradesmen or property owners, meant that in many cases they took little interest in local sanitary improvement.[14] However, of particular importance for the implementation of the 1875 Sale of Food and Drugs Act was the fact that tradesmen, who previously formed a large proportion of many metropolitan vestries, continued to have a great deal of influence within the new local boards.[15] In West Ham, sanitary administration became the responsibility of a local board in 1856, while in 1888 the population of West Ham was large enough for it to be made one of the original county boroughs. The borough would remain under the overall jurisdiction of Essex County Council, created in 1889 following the Local Government Act of 1888, until it was absorbed into Greater London in 1965.[16]

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[14] Wohl, pp.150 - 151.
[15] Owen, 1982, p. 219.
[16] *Victoria County History,*1966, p. 33. Edwards, p.113.

The Essex Police Structure

Following the introduction of the Adulteration of Food, Drink and Drugs Act, 1872, the Essex Court of Quarter Sessions agreed in principle that an analyst be appointed, and nominated inspectors of weights and measures to be the officials who would collect samples of food, drink and drugs within the county. In Essex, the police acted as weights and measures inspectors; therefore officials responsible for the collection of food samples would act under the direction of the Chief Constable. Having such an important role in the local implementation of adulteration legislation it is important to understand how the police force was structured within Essex. The Constabulary Act of 1839 had left the decision to establish a rural police force in the hands of county magistrates. In the case of Essex the justices of the peace agreed to the setting up of a full-time police force within the county in 1839. For policing purposes, the county was divided into two sections; the larger geographical section of the county was covered by the county police force, while the area nearest to London was covered by the Metropolitan Police. The Metropolitan Police division of Essex had been enlarged in 1839 to cover any place, except the City of London, which was part of the Central Criminal Court District, and any parish not more than fifteen miles distant from Charing Cross in a straight line. The Central Criminal Court District had been defined by statute in 1834, and incorporated a number of Essex parishes including Barking, East Ham, West Ham, Little Ilford, Leyton, Walthamstow and Wanstead. This area would later be extended beyond the Central Criminal Court District to take in many parishes which were relatively

rural at the time, such as Chigwell and Dagenham — areas that would now be classified as part of Greater London.[17]

There were also borough forces where watch committees, made up of elected council members, maintained local responsibility and were responsible for the appointment of police constables. While these borough forces did not appoint a Chief Constable, most boroughs had a person to fill this role variously titled Superintendent of Police, Head Constable or Chief Constable. The four ancient Essex boroughs of Saffron Walden, Colchester, Harwich and Maldon all established police forces, though initially none of them had full-time police.[18]

Following the establishment of the County Constabulary in 1839, Captain John McHardy was appointed as the first Chief Constable in 1840; one of the earliest Chief Constables to be appointed anywhere in the country.[19] McHardy was typical of those applying for the post of Chief Constable at this time; many were either naval or army officers and from the professional middle classes. Before his Essex appointment, McHardy had served in the Navy and the Coast Guard Service. McHardy's force was seen as a model of good policing and, in the decade following its foundation, there was a dramatic fall in the amount of crime in the county.[20] Even early in his career, McHardy's work was being complimented. Giving evidence to the Select Committee on Police (1852-1853),

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[17] *Victoria County History,* p. 34.
[18] Maureen Scollan, *Sworn to Serve,* 1993, pp. 16, 46.
[19] Scollan, p. 5.
[20] Carr, 1964.

Edwin Chadwick had praised the Chief Constable.[21] Serving as Chief Constable for 41 years, McHardy exerted a long-term influence on the police force in Essex. After being promoted to Admiral, McHardy retired in 1881.[22]

The Police and Sample Collection in Essex

As noted in chapter four, in areas such as Essex where police officers were responsible for the collection of food samples, it was often the Chief Constable's attitude towards the adulteration issue that determined how effectively this procedure was carried out. Examining correspondence between the Chief Constable and individual constables, as well as correspondence between the LGB and the Essex authorities, it is clear that McHardy was conscientious in his attempts to see the adulteration acts administered effectively. This positive attitude was in direct contrast to that of many other Chief Constables whose general indifference to the adulteration issue often resulted in poor sample collection within their areas.

Within the county of Essex, the police had acted as weights and measures inspectors since 1843 when, as an economy measure, all the incumbent weights and measures inspectors had been dismissed and police officers had taken over this role.[23] Acting in this capacity was not a popular task among many officers who felt that other police work was more important. It was also becoming

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[21] Evidence of Edwin Chadwick, *Report of the Select Committee on Police*, (Second Report) 1852-1853, (715) XXXVI, Q. 3645.
[22] Scollan, pp. 35-38.
[23] Scollan, p. 20.

increasingly unpopular among Chief Constables. As Carolyn Steedman observes, by the end of the 1870s, many Chief Constables had already begun to question the idea and wanted to see police work as the priority rather than other local duties.[24] The Adulteration Act of 1872 nominated weights and measures inspectors as possible collectors of food samples. When the additional category of police officer was added in the 1875 Sale of Food and Drugs Act, these objections became more pronounced.[25] As Steedman observes, police officers at this time were rejecting their role as 'executive agent of local government' and demonstrating a 'positive preference for finding the misdeed'. In some cases officers chose 'to detect crime whilst acting as inspectors of weights and measures...'.[26] Policemen themselves disliked acting as weights and measures inspectors. Steedman quotes one Northamptonshire superintendent who, in 1875, expressed the view that this role brought the police into contact 'with men who are not really criminals and make them unpopular'. The superintendent also added that 'coming into contact with the more respectable classes' could make 'life very irksome' if officers 'happen to offend them'.[27] Alienating the local community was of some concern to police officers who often relied on co-operation from the public when investigating criminal matters. In 1892, an inducement for police officers in Essex to act as inspectors of weights and measures was offered by the County Council. A gratuity of £10 was offered to the first six members of the Essex Constabulary who passed the Board of Trade

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[24] Steedman, 1984, p. 54.
[25] During the 1874 Select Committee on Adulteration it was noted that in one county 'police officers instead of attending to their legitimate duty have been running about the country with those samples'. *Select Committee on Adulteration of Food Act* (1872), 1874, (262) VI. Q. 61.
[26] Steedman is quoting *Hansard*, Third Series 216, p.1085. Steedman, 1984, p. 54.
[27] Steedman, p. 53. This quote is referenced by Steedman as PP.1875, xiii, p. 457.

examination for inspectors of weights and measures. The council would also pay examination fees.[28]

Given these changing attitudes to policing roles, it would seem that McHardy was unusual among Chief Constables in his concern to ensure that his officers performed the additional task of sample collection well. In 1879, he issued a detailed memorandum addressed to Superintendents and other officers of the Essex Constabulary suggesting that inspectors who collected samples make themselves thoroughly familiar with the 1875 Act; also outlining key features of their work. An abbreviated outline of this is given below:

1. Samples should be purchased in accordance with the terms of the Act and inspectors should offer proof of their identity...
2. That you should procure not less than six samples, but not more than twelve samples in each quarter except under special circumstances. Where it should seem desirable in your opinion to exceed the number twelve here specified, you will, before procuring samples, submit the particulars for my approval.
3. That for the purpose of assisting the analyst you should classify samples according to their various kinds and submit them at different times to the analyst taking for example milk, or milk and coffee at one time, tea at another, bread at another and so on.

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[28] General Orders issued by Chief Constables, 1885-1893, Order 714, January 1892, ERO (Chelmsford), Q/AP, p. 5.

4. All articles for analysis should be delivered to the analyst, in accordance with the provision of the Act s.16, at the laboratory of the London Hospital. It would be wise to communicate with Dr Tidy the day before, to notify him.
5. When the analysis is complete you will receive from the analyst a certificate of the result and before taking proceedings under s.20 you will procure the authority of the Chief Constable.
6. All proceedings taken by you under the Act must be recorded in a memorandum book and a quarterly return of the cases transmitted to the Chief Constable with your quarterly contingent report and a claim for any expenses incurred under the Act.[29]

Exactly how these guidelines were determined is not clear although it is quite possible they were the result of discussions with the public analyst. A printed table within this memorandum that set out exact quantities of foodstuffs to be obtained by officers when collecting samples would suggest that some communication between McHardy and the public analyst did take place on these issues, although there is no other evidence to support this. Some of the quantities of foodstuffs detailed in this memorandum are: half a pound of flour, half a pint of milk, two ounces of tea, two ounces of sugar, three ounces of butter, four ounces of coffee and half a two pound loaf of bread.[30] The memorandum did not clarify if these were the *total* quantities of sample required

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[29] Such detailed instructions from a Chief Constable on the adulteration issue were unusual. General Memoranda and Circulars from Admiral McHardy,1879, No.75. ERO (Chelmsford), J/P/8/1.
[30] General Memorandum No. 75, 1879, ERO (Chelmsford), J/P/8/1.

or whether three times these amounts needed to be purchased by the inspector; one third to be sent to the analyst, one third returned to the vendor and one third to be retained by the inspector. However, the quantities suggested by McHardy would indicate that these were total amounts.[31] By determining such exact quantities it is possible that McHardy hoped to avoid the problem of samples being rejected for analysis simply because they were of insufficient quantity. A frequent complaint, from both public analysts and the Excise Chemists, had been that the quantities of samples submitted were often too small to allow for an accurate analysis to be made.

In 1880 a further memorandum from McHardy requested that, in order to curb '...unnecessary expense', inspectors were to obtain no less than three samples but not more than six in each quarter, except in 'exceptional circumstances'. McHardy does not specify what these circumstances might be. This directive did not appear to affect sample collection, as there was an increase in the number of samples collected within the county from 1880.[32]

As the analyst for Essex was based in London, McHardy advised inspectors to wait until they had collected sufficient samples before making the journey. This in itself could present problems, as food samples often had to be stored in

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[31] It was not until 1894 that the LGB issued official guidelines on the quantities of samples inspectors should obtain. As a comparison with McHardy's quantities, the LGB guidelines of 1894 requested collection of: one pint of milk, three-quarters of a pound of tea, coffee and butter. *Twenty-third Annual Report of the Local Government Board*, 1893-1894, (C.7500) XXXVIII, Appendix A.

[32] General Memorandum, No. 84, 1880, ERO (Chelmsford), J/P/8/1. In 1879, 216 samples were collected within the county. In 1880 this number had risen to 331. *Ninth Annual Report of the Local Government Board* 1879-1880, (C. 2681) XXVI, *Tenth Annual Report of the Local Government Board,* 1880-1881, (C. 2982) XLVI.

unsuitable places like police stations. It was also not unknown for inspectors to make the journey to London only to find the analyst was absent. While they were advised to make contact the day before a visit, this was not always practicable. A good illustration of the time, effort and expense involved in taking samples to an analyst based some distance away can be seen from the very detailed account left by Superintendent Sam Hawtree, a police officer based at Southend Police Station. In 1881, he was requested to take samples of suspect sweets, which had been purchased in the town, to Dr Tidy, at the London Hospital. Travelling by train, he successfully delivered the samples. However, on the way home, his train was caught in a snowstorm and Hawtree had to remain in the carriage for fourteen hours before being forced to return to London. Setting out again, he suffered more delays before finally completing his journey on foot walking thirteen miles to his home. He had spent three days and two nights undertaking his task. As his report notes, this was 'at considerable expense' for which he claimed £1. 4s. 0. as well as 'spoiling a pair of shoes'. [33]

While Admiral McHardy retired from office only a relatively short time after the introduction of the 1875 Act, he none the less made an important contribution to the way it was implemented at local level within Essex. It seems clear from circulars and letters sent to Essex police stations by McHardy that he did his best to clarify the issues for his officers and to state clearly what was expected of them when taking samples. There is no indication in any of this correspondence that he considered such tasks to be an unnecessary burden on his force, nor did

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[33] Correspondence between Admiral McHardy and Superintendent Hawtree, Southend Police Station,12 March 1881, ERO (Chelmsford), Q/Fab 146/3.

he trivialise the adulteration issue. Had his term of office extended beyond 1881 no doubt his influence would have continued. McHardy's successor, Major William Poyntz, seems to have been far less involved in the local administration of the Act. In 1882 he requested that inspectors submit an account of their work twenty-eight days before the start of each quarter sessions as well as receipts for all articles purchased by them, such as bottles, string and stationery used for sample collection. In 1884, he issued a memorandum on the use of deputies in the sample collection process and this will be discussed later in the chapter. Apart from these communications there seems to be little evidence that Poyntz actively involved himself in the practicalities of the issue.[34]

Public Analysts

In this thesis constraints affecting the implementation of the 1875 Act at local level have mostly been discussed in a broad, general sense. As we have seen, many of these constraints were particularly relevant to the work of the public analyst. Practical difficulties such as large geographical areas, the reluctance of local authorities to fully implement the Act, together with anomalies and omissions in the law all presented difficulties for the public analyst and the way he undertook his role. By examining the role of the Essex public analysts in some detail these practical difficulties can be highlighted. This will provide a

[34] General Orders, 1881-1884, No. 37 February 1882, ERO (Chelmsford), D/Z 23/1. While the Essex Record Office (Chelmsford) contains a number of records on the adulteration issue during McHardy's term in office there are few records after this time. However, it is possible that Poyntz was more involved in the adulteration issue than records would indicate.

better understanding of the day to day implementation of the Act at local level and a clearer indication of the effectiveness of the 1875 legislation in general.

In 1872, the Essex Court of Quarter Sessions agreed in principle that an analyst be appointed annually, subject to the approval of the LGB. The Court also determined that the analysis 'be made in London'. This was a very pro-active response by the Essex authorities to the adulteration issue as, in many areas, analysts were not appointed for some considerable time after this date. The Court of Quarter Sessions also established the fee payable by anyone wanting a sample analysed and set this at five shillings. Of some importance to the implementation of the 1875 Act when it was later introduced was the Court's request that some communication take place between the Chief Constable and the county analyst. The county analyst was also required to send details of sample collection to the court.[35]

The Adulteration of Food, Drink and Drugs Act, 1872, extended the range of authorities who were permitted to appoint analysts and these remained the same following the introduction of the 1875 Act. In order to understand the somewhat complex arrangements for the appointment of public analysts, it is important to outline which authorities could appoint them. The 1875 Act stated that in parts of the metropolis outside the City of London vestries and district boards could appoint their own analysts, as could the court of quarter sessions of every county, and town councils of every borough having a separate court of quarter

[35] Resolutions passed by the Court of Quarter Sessions 1872, Sale of Food and Drugs Act, 1875, ERO (Chelmsford), J/P/13/1. TNA, MH 30/73.

sessions or a separate police force.[36] In 1875, as well as county quarter sessions held in the town of Chelmsford, Essex contained the four ancient boroughs of Colchester, Harwich, Saffron Walden and Maldon, all of which had their own police establishment and courts of quarter sessions. Under the terms of the 1872 Act, (unchanged in 1875), these boroughs were entitled to appoint their own analysts and determine who would collect samples in their areas. Colchester appointed their own analyst in 1874, Saffron Walden in 1878 and Maldon in 1879.[37] Following the Local Government Act of 1888, in all county boroughs and all quarter sessions boroughs with a population of 10,000 or more, the borough analyst was to be appointed by the town council. In all other cases, he was to be appointed by the county council.[38] After this date Saffron Walden and Maldon became part of the county administration and ceased to have their own analyst.

Within the county another ancient administrative area, the Liberty of Havering-atte-Bower, was also permitted to appoint its own analyst which it did but not until 1887.[39] West Ham, although administratively part of Essex, had its own local board and was also part of the Metropolitan Police District. As will be discussed later, this distinction caused some problem for the first *county* analyst

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[36] Sale of Food and Drugs Act, 1875, s.10.

[37] John Wiggin FCS was appointed as public analyst for Colchester in 1874. I have been unable to find any records of sample analysis performed by him. Following his death in 1879, Joseph Vincent Taylor worked as analyst but 'did not furnish the Board with sufficient documentary evidence as to his qualifications so office accordingly declared vacant'. William Foster FCS appointed February 1881 based at the Middlesex Hospital and William Chattaway appointed 3 January 1894 based at Apothecaries Hall, also public analyst for Hammersmith. Saffron Walden appointed James West Knights FCS in 1878, while Maldon appointed John Whitmore MD in 1879 and Thomas Pooley in 1881. Local Government Board, Register of Analysts. Boroughs and Urban Districts 1873-1955, TNA, MAF 101/378.

[38] Local Government Act, 1888, (51 & 52 Vict. c. 41), s. 38.

[39] Thomas Pooley, Essex County analyst, was appointed as analyst for Havering-atte-Bower in 1887, but following the Local Government Act of 1888 he ceased to hold this separate office. The authorities in Havering appointed Pooley without first obtaining approval from the LGB and were severely admonished by the Board for this action. TNA, MH 30/74, MAF 101/379.

who was unclear as to whether or not he was obliged to analyse samples collected in the West Ham area. The issue was eventually clarified and it was established that West Ham was within the remit of the county analyst. Later in the century many local authorities such as West Ham appointed their own analyst. In some cases, this would be the same person as the county analyst. For example in 1891, Thomas Pooley analyst for Essex, was also appointed as analyst for West Ham. In other areas a separate appointment was made.[40]

As in other areas of the country, local sanitary authorities within Essex were also permitted to appoint their own officials to collect samples which were then submitted to the county analyst for analysis. As the century progressed, more of these local authorities began their own sample collection and opted for different officials to collect food samples. Some used inspectors of nuisances, others the county inspectors of weights and measures, while still others used police constables. As the chapter will demonstrate, such an assortment of local authorities, many of whom later had their own public analyst, caused considerable confusion. In many cases local officials were themselves unclear as to their powers under the Act and there are a number of examples where the LGB admonished local authorities for contravening the Act by, for example, failing to collect samples or for appointing an analyst without first seeking LGB approval.

[40] TNA, MAF 101/378.

The First County Analysts

In 1873 the Essex Court of Quarter Sessions appointed Henry Letheby (1816—1876) and Charles Meymott Tidy (1843-1892) jointly as public analysts for the county of Essex. Information about these appointments was published in county newspapers. Essex was one of the counties in which no annual salary for its public analysts was determined; instead payment was to be made for each sample analysed. £1 1s 0d was to be paid for each sample up to 100, 10s 6d for each sample between 100 and 200 and 6s for each sample over 200.[41] Henry Letheby, analytical chemist and medical doctor had become Medical Officer of Health for the City of London in 1855 taking up the post from Sir John Simon. As well as analyst for the county of Essex, Letheby also held joint posts as public analyst with Charles Tidy for Hertford, Kent and East Sussex. Letheby was also public analyst for the City of London and Lecturer in Chemistry at the London Hospital. Charles Tidy, who had been one of Letheby's medical students at the London Hospital, was also an analytical chemist in private practice and became joint Lecturer in Chemistry at the London Hospital with Letheby. Following Letheby's death in 1876, Tidy took over his roles as Professor of Chemistry at the London Hospital and as analyst for the City of London. He also had from that time sole responsibility as public analyst for Essex, Hertford, East Sussex, Islington and Whitechapel.[42] In these appointments the Essex authorities decided on two medical practitioners to act as county analysts. While Charles Tidy would later become better known for his interest in water analysis, Letheby

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[41] TNA, MH 30/73.
[42] *The Oxford Dictionary of National Biography*, 2004. TNA, MH 30/73.

was already well known for his interest in food reform and his work with *The Lancet* Commission during the early 1850s.[43]

Following the appointment of Letheby and Tidy in 1873, very few samples were collected. In other areas of the country, the lack of sample collection could be explained by the fact that no inspectors had been nominated, despite the fact that the 1872 Adulteration Act had identified the three groups of official permitted to perform this role. Within Essex, although the Court of Quarter Sessions had, in 1872, nominated inspectors of weights and measures to carry out this function it would seem that few were appointed initially.

Following the introduction of the1875 Act, sample collection apparently continued to be sporadic. During 1876, a number of communications from the LGB to the Essex authorities requested explanations. The replies would seem to confirm that, despite the Quarter Sessions nominating the category of official who should be appointed in the county, in many areas, inspectors had not been appointed; therefore no samples could be collected. These communications confirm what was said in chapter three about the Board's influence — or lack of it — on local matters. Despite a prodigious amount of correspondence between the LGB and local authorities on aspects of the Act such as sample collection, they had limited powers to influence matters. In the case of Essex, much of this correspondence contains hand-written comments from senior figures at the LGB such as the Permanent Secretary, John Lambert, and Hugh Owen, the Assistant Secretary.

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[43] In 1870 Letheby's best known work was published. This treatise, *On Food: its Varieties, Chemical Composition, Nutritive Value, Adulteration etc.*, was a compilation of lectures given by Letheby before the Society for the Encouragement of Arts in 1868.

and indicates the detailed level of involvement of these officials in the adulteration issue.[44] According to the Essex figures taken from the LGB Annual Reports, only fourteen samples were submitted during 1877 and just seven in 1878.[45] In 1879, the same year as McHardy's memorandum on sample collection issued to local officers of the Essex Constabulary, there was a large increase in sample collection to 216. As Charles Tidy noted in his first detailed report to the Essex authorities, which was not until that year, fifteen inspectors had now been officially appointed and the large increase in sample numbers was possibly due to this fact. By 1880, there was a further increase with the submission of 331 samples.[46] Essex was not the only county with such a poor initial response to the Act; the neighbouring county of Suffolk also failed to collect a single sample in 1877. Other parts of the country did little better, although in some areas sample collection was much higher. According to LGB figures in 1877 Lancaster, for example, collected a remarkable 1,567 samples.[47]

As emphasised earlier, a principal constraint on the successful implementation of the 1875 Act was the fact that inspectors collecting samples were often recognised. This issue had been raised by Charles Tidy when giving evidence to the Select Committee on Adulteration of Food in 1874. Tidy noted there were 'numerous cases' where inspectors collecting samples were greeted by shopkeepers with; 'We know you; we have got something ready for you'. As a

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[44] Essex 1872-1882, TNA, MH 30/73.
[45] *Seventh Annual Report of the Local Government Board,* 1877-1878, (C. 2130) XXXVII. *Eighth Annual Report of the Local Government Board,* 1878-1879, (C. 2372) XXVIII.
[46] *Ninth Annual Report of the Local Government Board* 1879-1880, (C. 2681) XXVI. *Tenth Annual Report of the Local Government Board,* 1880-1881, (C. 2982) XLVI.
[47] *Seventh Annual Report of the Local Government Board* 1877-1878, (C .2130) XXXVII.

result 'getting adulterated things is quite impossible'.[48] That this was an important factor within Essex, Tidy made clear. During his time in office, Charles Tidy frequently expressed concern that the true level of adulteration within the county was unlikely to be established if inspectors were known to local traders. Always cautious about any apparent reduction in adulteration levels, Tidy felt that where this did occur it had more to do with inspectors being known, and therefore being given samples that were not truly representative, than any improvement in food quality. It was obvious to Tidy, that where policemen were also working as inspectors of weights and measures, they were already well-known to local shopkeepers and would be given only genuine food. He expressed the hope that some solution to the problem might be found or 'I feel your analyst will soon fall into disrepute'. [49] Why Tidy should feel personally responsible is not clear. It is possible that if inspectors were recognised and thus given samples that were not adulterated, adulteration levels within Essex (following Tidy's analysis) would not be commensurate with adulteration rates from other areas and by implication, this might reflect on Tidy's expertise. The problem of inspectors being recognised was remarked upon in the 1880 correspondence between the Essex authorities and the LGB. In a letter from the LGB, there is a hand-written comment which notes, '...I learn privately that samples are collected in Essex by policemen in uniform. It is not wonderful that the analyst finds little adulteration'.[50]

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[48] Evidence of Charles Tidy, *Select Committee on Adulteration of Food Act 1872, 1*874, (262) VI, Q. 5335.
[49] Quarterly Report, September 1879, TNA, MH 30/73.
[50] This hand-written comment is possibly from John Lambert, Permanent Secretary to the LGB. TNA, MH 30/73, 1880.

West Ham Local Board and the Adulteration Acts

Tidy's responsibilities as public analyst for Essex included responsibilities within the jurisdiction of the West Ham Board. In his short time working for the West Ham Board —he retired in 1881 —Tidy's disputes with the Board between 1879 and 1881 provide a very good illustration of the many difficulties faced by public analysts at the local level. They also show the involvement of local bodies in the routine administration of the Act and reveal their attitude to the adulteration issue. For these reasons the activities of the West Ham Board at this time will be examined more closely.

As discussed previously many local boards were dominated by tradesmen or property owners who, in an effort to protect their own interests as well as keeping local taxes low, often opposed sanitary improvement.[51] However, as far as the West Ham Local Board is concerned, there is little evidence in the records to suggest that its members were particularly opposed to the implementation of adulteration legislation. There were however, other factors influencing council policy and while it would be unwise to generalise, these factors might equally apply to other boards. The records from West Ham show that the local board suffered from 'chronic financial weakness' and was simply overwhelmed by problems such as huge population growth, uncontrolled industrial development and housing shortages. Until it was incorporated as a municipal borough in 1886 the local board did not provide any public baths, libraries or parks while several

[51] Wohl, pp.166 - 175.

board members were convicted of fraud or other financial malpractices.[52] Given the boards often sluggish response to urgent tasks, any intransigence on adulteration issues is not surprising and cannot be blamed simply on a preponderance of tradesmen as members of the local board. There was also genuine confusion over aspects of the Act as well as disagreements with the analyst, Charles Tidy, which in many cases arose because of his own personal confusion over the implementation of the Act. What the West Ham Board's minutes do illustrate is a great desire for maintaining local autonomy together with a determination to keep the local rate as low as possible. This last factor may have had some influence on the dispute Tidy would have with the West Ham Board over the issue of fees.

At a meeting in 1873, the West Ham Board was notified that Charles Tidy and Henry Letheby had been appointed to act as public analysts for the county of Essex; appointments made the previous year by the Court of Quarter Sessions. Administratively part of the county of Essex at this time, these appointments would also cover the West Ham area. The minutes record that at this meeting the Clerk was instructed to obtain the addresses of Tidy and Letheby as well as those of the inspectors of weights and measures who had been nominated to collect samples. This information was to be circulated in the district together with a statement explaining how anyone 'wishing to take advantage of the provisions of the Act' (1872) could proceed.[53] Exactly how, or even if, this was achieved, is not noted. However, it does demonstrate that, contrary to some opinion

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[52] Council of the London Borough of Newham, *West Ham 1886-1986*, 1986, pp. 84-91.
[53] West Ham Local Board of Health minutes 1873-1878, 26 August 1873. Stratford Archive and Local Studies Centre.

expressed at the time by public analysts and the LGB that poor sample submission from the public was due to local bodies failing to inform them about the opportunity for analysis, some local bodies did make an effort to provide this information.

Disputes between Tidy and the West Ham Board, mainly in 1879 and 1880, seem to have occurred because Tidy was confused and unclear about many aspects of the 1875 Act and his duties as Public Analyst for Essex. Often these disputes involved the LGB and resulted in a vast amount of correspondence between the three parties. This correspondence provides an opportunity to view the issues from all three perspectives. In some instances, it seems that Tidy was unaware of his responsibilities, such as the need to analyse samples within twenty-eight days. His ignorance on this matter may have occurred because this requirement was only introduced in the Sale of Food and Drugs Act Amendment Act of 1879 and Tidy had not been made aware of it.[54] While the LGB issued numerous circulars and memoranda to local authorities on all aspects of adulteration legislation, it was the responsibility of these authorities to ensure this information was passed to the appropriate recipients. Clearly, this was an area where mistakes could be made if local bodies were not enthusiastic about applying adulteration legislation.

The West Ham authorities were obviously aware of the twenty-eight day time limit for sample analysis as one of the initial disputes with Tidy concerned this

[54] Sale of Food and Drugs Act Amendment Act, 1879, s.10.

very issue. After Tidy failed to analyse several samples within the permitted time limit, the West Ham Board sent a number of forceful letters to him expressing concern that unless samples were analysed within the twenty-eight day limit then no summons could be issued. In reply Tidy admitted that he did not know about the time limit or 'had forgotten', adding that the delay had been '...occasioned by an unusual stress of work and the strain of home anxiety'.[55] This admission was an indication that Tidy was possibly overworked, covering as he did other geographical areas as public analyst, as well as holding a variety of other appointments. As mentioned in the previous chapter, many analysts covered extensive geographical areas and this was of some concern to the LGB. In 1873, at the time of Tidy's appointment to one of his other posts, John Lambert, Permanent Secretary to the LGB had expressed concern about Tidy's workload and had asked for a personal assurance that he would be able to cope without the use of a deputy.[56] Other public analysts also covered large geographical areas and some used deputies, but there is no indication that Tidy worked with a deputy in Essex. Following the dispute over samples, Tidy offered to resign. However, while he did not do this he made matters worse by suggesting that the reason he had not analysed samples for West Ham was because such action 'would be merely harassing trade'.[57] By thus appearing to condone adulteration by some members of the trading community and taking upon himself the decision not to analyse samples, by-passing the local board, Tidy provoked an angry response both from the West Ham Board and other public analysts. An

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[55] Letter from Tidy to West Ham Board, October 1879, TNA MH 30/73.
[56] This was at the time of Tidy's appointment as analyst for the county of Sussex. April 1873. Sussex, 1872-1882, TNA, MH 30/247.
[57] West Ham Local Board of Health minutes 1878 - 1881, 11 November 1879, Stratford Archive and Local Studies Centre. TNA, MH 30/73.

interesting comment on the issue, and one that also provides some indication as to how public analysts viewed medical officers of health acting in the capacity of public analyst, was provided by *The Analyst* in 1880. The journal felt that it was a great pity Tidy had not resigned 'and have done with it' and 'not pretend to carry out the duties of his office'. The journal fully endorsed the view expressed by the West Ham Board, that it was up to them, and not the analyst, to decide what cases should be prosecuted. The journal advised Tidy that by his actions he was 'discrediting the whole body of public analysts by arrogating functions which the Act does not give him'.[58]

While his reports seem to indicate that Tidy was anxious to implement the Act effectively, there is some indication that he did in fact sympathise with local traders admitting in 1880 to a 'degree of leniency when adulteration is a simple question of trade competition...'.[59] Quite what was meant by this comment is unclear but, as will be discussed later, some saw this as an admission that samples from certain traders, even if adulterated, would be declared 'genuine'. This led to many acrimonious exchanges, not only with West Ham Local Board but also with the LGB.

A further dispute occurred during 1880 and illustrates the possibility for confusion that could exist between public analysts and their employing authority regarding the analyst's remit. Despite a clear statement at the time of Tidy's appointment that he was responsible for the whole of the county including West Ham, and

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[58] *The Analyst,* **5,** 1880, p. 89
[59] January 1880, TNA, MH 30/73.

would therefore be paid by the county for each sample analysed, for some reason in 1880, Tidy requested outstanding fees for analyses which he expected West Ham Board to pay. They refused to do so. At the same time he became involved in another incident which only exacerbated ill feeling between him and the West Ham authorities. Tidy had analysed a sample of coffee for the local board and pronounced it to be genuine. However, as the sample had been sold as 'coffee and chicory' it was sent by the West Ham authorities to Somerset House who certified that the coffee did indeed contain chicory. Coupled with the issue over who should pay Tidy's fees, this incident appears to have been the final straw for the West Ham authorities who increasingly seemed to be losing patience with their analyst. In a number of letters to the LGB, they not only raised the various administrative issues but, following the coffee incident, also expressed concern about Tidy's competence as an analyst. For their part, the LGB expressed similar concerns. Tidy was outraged that the West Ham Board had failed to correspond with him personally over the coffee issue. He claimed to only have found out when a friend sent him a report from a local newspaper. Matters seemed to degenerate until finally, in January 1881, a committee appointed by the Court of Quarter Sessions was held in Chelmsford to consider all the complaints. This committee decided that the West Ham authorities were quite correct on the fees issue and Tidy's fees should be paid by the county. Almost immediately, Tidy offered his resignation as analyst for the county of Essex and this took effect from February 1881.[60]

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[60] West Ham Local Board of Health minutes 1878-1881, Stratford Archive and Local Studies Centre. TNA, MH 30/73.

Whatever the rights and wrongs of the various disputes between the West Ham Board, Charles Tidy and the LGB, the length of time it took to resolve many of the issues — the fees dispute for example went on for over a year — together with the numerous letters between the three parties on various aspects of the Act, all indicate the level of uncertainty and confusion experienced at local level over the 1875 legislation. Also, for the many analysts already opposed to the idea of medical officers working as public analysts, Tidy's difficulties confirmed their belief that combined medical officer of health and public analyst posts were not a good idea.

The effect of these disagreements on the actual implementation of the Act is more difficult to estimate. It is clear that Tidy's lateness in reporting on some samples may well have allowed certain offenders to escape prosecution, while the considerable time taken up with the various disputes cannot have helped an apparently overworked analyst. At one point in 1879 in the middle of the disputes with Tidy, West Ham Board took the decision to stop collecting samples. This did not seem to happen as samples, albeit very few, continued to be collected. However, later in the century there were many times when no samples at all were collected in the West Ham area and it is quite possible that earlier problems over the implementation of the Act and disputes with the analyst had some effect on this.[61]

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[61] The minutes of the West Ham Board indicate that the decision not to take samples was strongly opposed by one West Ham Board member Richard Glover, a veterinary surgeon, who wrote to the LGB stating that such a step was 'an authoritive encouragement to adulteration in the neighbourhood'. It is not possible to say how this was resolved as the issue was referred to the General Purposes Committee whose records have been lost. West Ham Local Board minutes, 1878-1881, July 1879, Stratford Archive and Local Studies Centre.

The dispute with the West Ham Board was not the first time Charles Tidy had seemed confused by aspects of adulteration legislation. Earlier, in 1874 a sample of bread had been submitted to Tidy by an inspector of nuisances from Maldon Sanitary Authority, a relatively rural area within Essex. Tidy did not feel he had 'the power' to analyse samples submitted by inspectors of nuisances and considered that he only had responsibility to analyse samples submitted by the police acting as inspectors of weights and measures. Once again, this issue involved a great deal of correspondence between Tidy, the local sanitary authority, who were themselves unclear on the issue, and the LGB. Eventually, the issue was clarified and Tidy agreed to analyse the sample.[62] As will be discussed later, the issue of which local bodies were permitted to appoint inspectors to collect samples was just as confusing following the implementation of the 1875 Act. It is therefore not surprising that local councils were themselves unclear as to who could act in this capacity. This is yet another illustration of the many ambiguities within the legislation that acted as a constraint to effective implementation.

Thomas Alexander Pooley (1840-1904)

Public Analyst for Essex 1881-1904

Following the resignation of Charles Tidy in January 1881, Thomas Alexander Pooley was appointed as analyst for the county of Essex. He would retain this

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[62] Thomas Longdin, the inspector involved in this dispute, seemed unconcerned about who was authorised to analyse the sample and more concerned that he was 'still owed 14 shillings for taking six samples of bread and flour to London'. Correspondence Relating to Appointment of County Analyst, April 1874, ERO (Chelmsford), Q/amz 6.

post into the next century.[63] The Essex authorities received official approval of his appointment from the LGB in March of the same year; a remarkably short time as many cases took months. He subsequently took up separate and additional posts as analyst for two other areas in Essex; the Liberty of Havering-atte-Bower in 1887 and the Borough of West Ham in 1891. Pooley was a BSc (London) and Fellow of the Institute of Chemistry.[64] He had twenty-two years experience in practical chemistry as well as being a consulting chemist. As noted previously, this role of chemical consultant in areas such as industry, agriculture and later the food industry was held by many chemists also acting as public analysts. In correspondence with the LGB concerning his appointment, Pooley lists four people from whom testimonials might be obtained. In one from Professor Graham, Professor of Chemical Technology, University College London and Public Analyst for Lincolnshire, Pooley's professional experience is confirmed; he had obtained a 'large, varied and accurate knowledge of analytical chemistry and of chemistry applied to brewing, distilling, agriculture and pharmacy'.[65]

Based initially in private premises in Walbrook, London, and later at analytical laboratories in Broad Street, London, Pooley's appointment with Essex was subject to three months notice on either side and his remuneration based solely on sample analysis to be paid at the same rate as his predecessor: £1 1s 0d for

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[63] It would appear Pooley was the official Essex analyst up to the time of his death in 1904. However, in July 1901 owing to Pooley's ill health, Bernard Dyer was appointed to act for six months and to be remunerated by Pooley. After this time Dyer was re-appointed as analyst for Essex until 1905 and then permanently until 1927. TNA, MAF 101/379.

[64] FIC was a qualification awarded by the Institute of Chemistry. The Institute had been established in 1877 with the aim of setting standards of professional competence. The award of a Fellowship confirmed this had been achieved. Russell, Coley and Roberts, 1977, pp.135-157.

[65] TNA, MH 30/73, February 1881.

each sample up to 100, then 10s 6d for samples up to 200 and 6s for each sample over 200.[66] In his role as public analyst for Havering he received the same scale of payment but for his appointment as analyst to the Borough of West Ham in 1891 he received an annual salary of £21 plus 10s 6d for each analysis.[67]

In both his quarterly and his annual reports, Pooley provided a very detailed commentary on the implementation of the 1875 Act. He identified areas of concern, such as inspectors being known, the lack of agreed standards and the problem of low fines. His returns showed figures for sample collection within the county, the number of analyses performed and adulterations found. These figures were submitted to the county authorities on a quarterly basis who in turn submitted them to the LGB for publication in the Board's Annual Reports. In many of his reports Pooley also provided a detailed breakdown and commentary on his figures. For example, he tabulated the various areas in the county where samples had been collected. This makes it possible to compare sample collection and apparent adulteration rates between urban and rural areas of the county. Similarly, in some reports he listed specific items of food and drink such as milk, butter and bread, the areas from where these samples were collected and the adulterations found. As a result it is possible to identify trends and the geographical area of the county where adulteration appeared to be most

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[66] TNA, MAF 101/378, MAF 101/379. According to the LGB, 331 samples were analysed in the county of Essex in 1881. Based on their rates of pay this would provide Pooley with an annual income of £196 16s 0d from sample analysis in Essex alone.
[67] TNA, MAF 101/378.

prevalent. From 1882 Pooley also gave information on prosecution and conviction rates for adulteration offences.

Discrepancies in Official Adulteration Statistics

Before examining sample collection and analysis within Essex it is essential to make some general observations about sample numbers and the percentage figures for adulteration used in this chapter. For most years, there is some discrepancy between total adulteration figures for Essex as shown in the published annual reports of the LGB, and the annual returns of the Essex analyst contained in the records of the LGB.[68] As the LGB always records higher numbers than those of the analyst it would seem likely that sample numbers not recorded by the county analyst were being added in by the LGB. Confirmation that this might be the case can be seen after 1887 when adulteration statistics for boroughs as well as counties were first itemised in the LGB annual reports. From this time boroughs within Essex such as Colchester, Saffron Walden and Havering-atte-Bower were itemised separately. Following the Local Government Act of 1888, Saffron Walden and Havering became part of the county and were no longer listed separately after 1889, while from 1891, West Ham appeared in the separate borough section of the published LGB figures. When figures from these boroughs are added to the Essex analyst's returns they make a much closer approximation to the LGB figures.[69]

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[68] The quarterly and annual returns of the Essex analysts between 1872 and 1897, TNA, MH 30/73, MH 30/74, MH 30/75, MH 30/76, MH 30/77.
[69] *Seventeenth Annual Report of the Local Government Board* 1887-1888, (C.5526) XLIX. *Twenty-first Annual Report of the Local Government Board* 1891-1892, (C. 6745) XXXVIII.

However, a puzzling anomaly remains. From 1877, the fifteen districts of the county within which inspectors were to collect samples were clearly identified in the reports of the Essex analyst, as were the names of individual inspectors responsible for those areas. They included areas such as Brentwood, Chelmsford, Epping and Ilford. Also included was an area identified as 'Colchester'. In 1887, this area continued to be included in the returns of the county analyst. The analyst reported that for the year, eighteen samples had been submitted from the 'Colchester' district. However, in the annual figures for adulteration published by the LGB, the Borough of Colchester was recorded as submitting no samples for 1887. Similarly, in 1888 the county analyst's annual return indicates that twenty-three samples were collected from the 'Colchester' district. However, Colchester Council records show that a 'nil' report on sample collection was received from the analyst. Similarly, the LGB Annual Report for 1888 also shows that no samples for Colchester were submitted during this year.[70] It would therefore seem fair to suggest that in an area like Colchester, part was included within the overall sample collection area for the county and inspectors submitted samples to the county analyst, while the Borough of Colchester, who had appointed their own analyst in 1874, was also permitted to collect and analyse samples.

As the century progressed, many other local authorities within Essex also collected samples while some also appointed their own analyst. In some cases figures for these areas do appear on the returns of the county analyst. In cases

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[70] TNA, MH 30/75. Borough of Colchester Council Minute Book 1885-1889, ERO (Colchester), D/B 6M1/11. *Eighteenth Annual Report of the Local Government Board* 1888-1889, (C. 5813) XXXV.

where they do not it is quite possible that these figures were included by the LGB. Such an assortment of local authorities, many of whom demonstrated that they were themselves very unclear about their role implementing the1875 Act, together with the somewhat confusing picture on sample numbers that emerges, simply reinforces what has been said already in this thesis about constraints on the implementation of the Act.[71]

Confirmation that local figures did not always tally with those published by the LGB can also be seen in the report of the Middlesex Special Committee for 1889. In this report the Committee gives figures for adulteration compiled from inspectors' records and notes that these figures 'again differ slightly from the figures contained in the reports of the Local Government Board'.[72] As a result of these discrepancies, and those in areas such as Essex, official figures for adulteration may well have underestimated the extent of the problem and should be taken as an indication of trends rather than a totally accurate source.[73]

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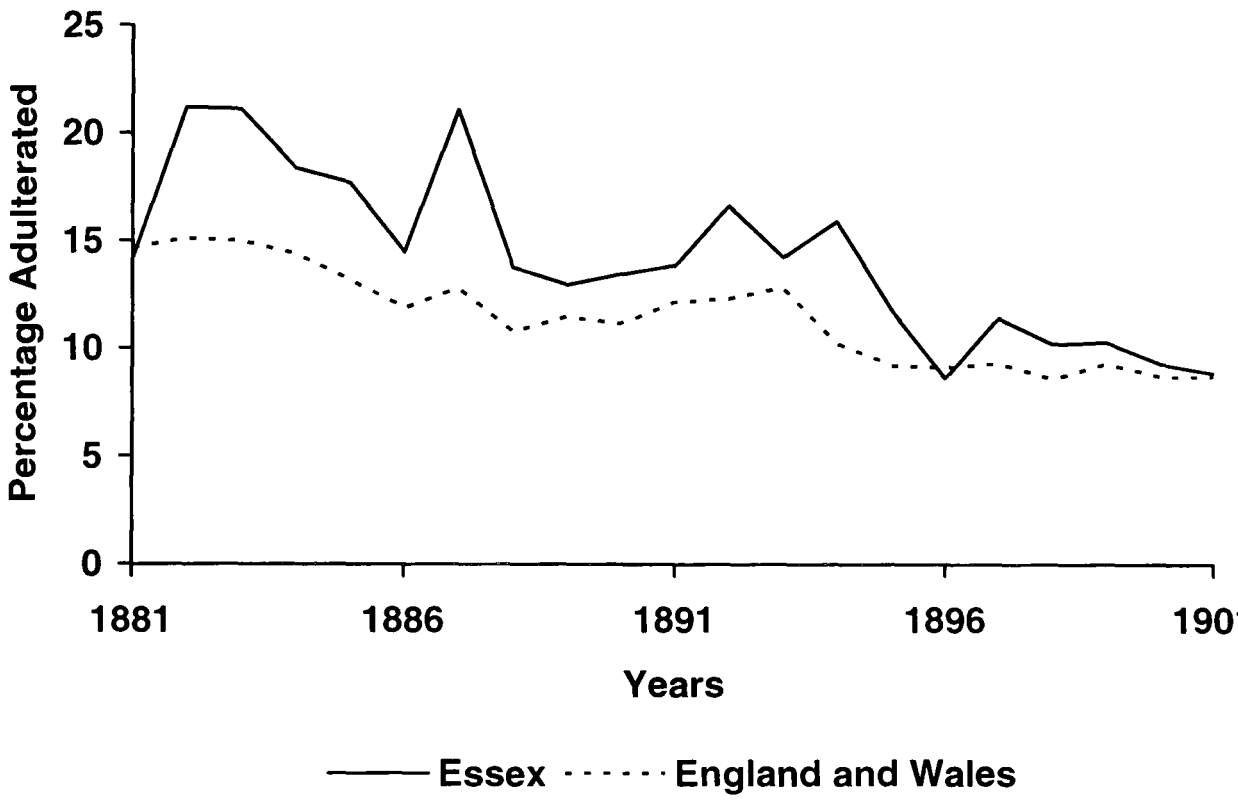
[71] Essex County Register Correspondence 1883-1888, TNA MH 30/74, Essex County Register Correspondence 1889-1892, TNA MH 30/75.
[72] Report of the Special Committee Appointed to Superintend the Administration of the Adulteration Acts, Middlesex, 1889, LMA, MA/RS/1/14.
[73] For the purpose of discussion and analysis in this chapter, total numbers for sample collection together with percentage figures for adulterations found, will be taken from the LGB Annual Reports. In other cases where specific items of food such as milk are being discussed, or issues such as prosecution and conviction rates, then the reports and figures of the county analyst will be used.

Sample Collection and Analysis within Essex

As can be seen from the following graph, adulteration rates within the county appeared to decline from the mid 1880s.



Percentage of samples found to be adulterated. Essex compared to all of England and Wales. Source: LGB Annual Reports 1881-1901.

This trend compared favourably with the apparent general decline in adulteration seen throughout England and Wales. At the end of 1882, the first full year Thomas Pooley was in office, adulteration rates in the county were 21.2 per cent. As a comparison, adulteration rates for the rest of the country were 15.1. By 1901, adulteration rates in Essex had fallen to 8.95 per cent, a much closer

figure to the national percentage of 8.8 per cent. There were some years when this downward trend was reversed. In Essex, for example in 1887 adulteration rates suddenly rose to 21.1 per cent but on the whole they seemed to show an overall decline.

However, as the graph demonstrates while adulteration rates in Essex broadly followed the national trend, rates almost always appeared higher within the county than the rest of the country. One possible explanation for this was that Essex figures were distorted by higher rates of adulteration in the more urban areas of the county. In 1882, for example, the overall rate for adulteration within the county was 21.2 per cent, but in West Ham the rate was much higher at 55.5 per cent.[74] Higher rates of adulteration often found in urban areas were an aspect of the adulteration issue frequently emphasised by the LGB.

Many of the factors which could explain higher rates of adulteration in urban areas have already been discussed, such as a transient population and the anonymity provided in the urban setting for the would-be adulterator. In towns there were also great numbers of shopkeepers, traders and street-sellers all of whom increased the potential for adulteration. Another factor was that in more heavily populated areas such as West Ham, which by 1891 had a population of 204,903, inspectors were less likely to be known and were therefore far more likely to receive the quality of goods given to ordinary customers, instead of ones specially selected for them. Pooley frequently commented on the problem of

[74] TNA, MH 30/74.

inspectors being known and suggested that because of this, official figures were not an 'accurate reflection' of adulteration rates within the county.[75] This observation would seem to be confirmed when in 1883 several deputies were employed within Essex to collect samples. In areas where they were used the numbers of adulterations increased. The advantages of using deputies was confirmed in Pooley's quarterly report for March 1887. In just one quarter, six samples out of twenty-one were found to be adulterated and all of these had been collected by deputies, while for the whole of 1882 twenty-nine samples had been analysed and only three found to be adulterated.[76] Pooley always considered the use of deputies to be an 'admirable' move and one that should be extended to other areas.[77] Records do not indicate how many deputies were used within Essex or in which areas they might have been employed, but their use was obviously considered beneficial as, in 1884, the Chief Constable, Major William Poyntz, issued very specific directions for the use of deputies in the sample collection process:

> The Chief Constable having been empowered by the Court of Quarter Sessions to order any member of the Constabulary who is appointed as Inspector under the Sale of Food and Drugs Act, to employ a deputy (not being a police officer) to procure samples for analysis and to charge the expense of such employment in his account, provided the amount incurred by each inspector does not exceed £2 per annum has to direct

[75] Essex Annual Report, 1883, TNA, 30/74.
[76] March 1887, TNA, MH 30/74.
[77] Essex Annual Report,1883, TNA, MH 30/74.

> that Inspectors shall except under very urgent circumstance, obtain permission from him before employing any persons as above.[78]

The fact that these instructions stipulated that deputies should not be police officers indicates that the Chief Constable was possibly aware of the problems of these officials being recognised when collecting food samples. On the other hand, it is more likely that the use of deputies to collect samples allowed police officers to perform their more usual role, while the budgetary savings on the employment of deputies would also have been an important consideration for Poyntz.

Another factor influencing increased rates of adulteration in the urban area, was that in many of these districts sample collection was not only erratic, but often ceased altogether. This was certainly the case in West Ham where sample collection was suspended on a number of occasions. With no fear of a visit from the inspector, traders felt they could freely adulterate their goods. As a result, once sample collection resumed, higher rates of adulteration were often reported.[79] In his annual reports, Pooley often commented on the fact that adulteration rates seemed to be higher in urban areas of the county. In 1887, when adulteration levels for Essex rose to 21.1 per cent, the detailed records kept by Pooley show that in the Metropolitan Police District of Essex, as well as a

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[78] Station Sergeant's private copies of General Orders issued to Essex Police from Headquarters 1881-1884. No. 211, 19 April 1884, ERO (Chelmsford), D/Z 23/1.
[79] December 1888.TNA, MH 30/75.

number of urban boroughs within the county, such as Walthamstow and West Ham, adulteration rates were in fact over 30 per cent. [80]

Sample numbers within Essex were almost always higher than those of neighbouring counties. In 1881 for example, while 352 samples were collected within Essex, Suffolk collected just three samples and Norfolk 78. These counties were of course almost entirely rural with no great centres of population.[81]

As the following table indicates the number of samples collected in the county gradually increased with the largest percentage increase occurring towards the end of the century.

Year	Total Samples
1881	352
1886	552
1891	674
1896	913
1901	2,343

Number of samples collected in Essex 1881-1901. Source: LGB Annual Reports.

[80] Annual Report, 1887, TNA, MH 30/74.
[81] *Eleventh Annual Report of the Local Government Board,* 1881-1882, (C. 3337) XXX Pt.1. In 1890 things were little better, within Essex total sample numbers were 622 but in Suffolk just 83. *Nineteenth Annual Report of the Local Government Board*, 1889-1890, (C. 6141) XXXIII.

In 1881, the LGB urged local authorities to increase the sampling ratio to one sample per 1,000 of the population.[82] In 1889, the national ratio was one sample per 964 of the population, while in Essex for the same year this ratio was very similar, indeed slightly better, with one sample per 928 of the population.[83] By 1900 the LGB estimated that the national ratio was now one sample per 461 of the population, while in Essex for the same year the ratio was even better at one sample per 343 of the population.[84]

Pooley seems to have had a good working relationship with the inspectors, communicating with them frequently and urging them to comply with the LGB directive and improve sample collection. It would seem that by the end of the century his objective had been achieved. However, there were still areas such as West Ham where sample collection was poor and compared unfavourably with neighbouring boroughs. In 1891, West Ham collected just 24 samples compared to Mile End which collected 172 samples and Poplar with 290.[85] As Pooley noted, in those areas of Essex where recommended sampling ratios were not being reached adulteration levels were the highest.[86]

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[82] *Tenth Annual Report of the Local Government Board*, 1880-1881, (C. 2982) XLVI.
[83] *Nineteenth Annual Report of the Local Government Board*, 1889-1890, (C. 6141) XXXIII. This figure has been calculated from 1881 census figures for Essex which give the population as 576,434 with 622 samples analysed during 1889.
[84] *Thirtieth Annual Report of the Local Government Board,* 1900-1901, (Cd. 746) XXV. This figure has been calculated from 1891 census figures for Essex which give the population as 784, 258 with 2,284 samples analysed during 1900.
[85] *Twenty-first Annual Report of the Local Government Board*, 1891-1891, (C. 6745) XXXVIII.
[86] Annual Report, 1884, TNA, MH 30/74.

There were also other areas within Essex that failed to collect any samples or, if they did, very few, despite being prompted to do so by Thomas Pooley and the LGB. In the 1881 Annual Report, the Board observed:

> The Town Councils of the smaller boroughs, especially, seem generally very unwilling to entertain a suspicion that the articles sold in their districts may possibly be adulterated; and, although we have taken care to point out that the Act is designed not only to protect the public, but also to prevent honest tradesmen from being undersold by unscrupulous competitors, we have in most instances failed to persuade this class of Authorities to have samples analysed.[87]

Some local authorities decided to wait until complaints about adulteration were received before instituting sample collection, while in many other cases local councils seemed genuinely confused about their role administering the Act. These points are clearly illustrated in correspondence between the LGB and various local bodies within Essex. In 1884, the LGB issued a circular to all local sanitary authorities requesting that they use their powers under the Act and implement sample collection.[88] While many of the replies to this circular confirm that local councils within Essex were indeed confused about their role, the general tone of others indicates some resentment at interference from the LGB.

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[87] *Eleventh Annual Report of the Local Government Board,* 1881-1882, (C. 3337) XXX Pt.1, p. xcix.

[88] *Fourteenth Annual Report of the Local Government Board,* 1884-1885, (C. 4515) XXXII, Appendix A. p.16

Woodford Local Board felt it 'unnecessary' to appoint additional officers. Both Epping and Braintree Rural Sanitary Authorities indicated that they used the county inspectors of weights and measures but were unsure if they should also use their own inspectors. Southend Local Board reported that they used inspectors of nuisances for sample collection and these inspectors submitted samples to the public analyst they had appointed. This last point received a sharp reprimand from the LGB who pointed out that local boards were not 'empowered' to appoint their own analyst and all samples were to be sent to the county analyst.[89] It is clear from many of these local records that those authorities who were collecting samples often spent a great deal of time discussing the Act including setting the exact number of samples to be collected. In 1897 in Woodford for example, inspectors were advised not to collect more than ten samples per month. Local Board minutes also show that many meetings discussed every last detail of sample collection such as where the cupboard for storing samples might be sited, or how much money inspectors should be allocated for purchasing bottles and string to be used for sample collection.[90]

In his annual reports Pooley consistently drew attention to poor sample collection within the county, in the West Ham area in particular. Here sample collection was particularly patchy. In 1888, after no samples had been submitted for 'many months', Pooley admitted that 'the Act is practically in abeyance in that thickly populated district'.[91] Why sample collection in West Ham was so poor is a matter

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[89] July 1884, TNA, MH 30/74, Woodford Local Board of Health minutes 1884-1887, Redbridge Local Studies Library.
[90] Woodford Urban Council minute book, 1897-1901, Redbridge Local Studies Library.
[91] Essex, 1889-1892,TNA, MH 30/75, September 1888.

of conjecture but it may possibly have had something to do with the earlier, very acrimonious, disputes between Charles Tidy and the West Ham Local Board.

Essex also mirrored the national trend when it came to sample submission by the public; there were many years when few, if any, were received from private individuals. Pooley often expressed concern about this poor response and felt that samples received from the public would represent a more accurate level of adulteration. In common with other analysts he attributed the low level to the fact that the sampling procedure was too complicated and noted in 1886, 'the formalities for obtaining a purchase for analysis under this Act are so elaborate they deprive private individuals from availing themselves of its provisions'.[92]

Earlier in 1881, in a letter to the Chief Constable at the time, Admiral McHardy, Pooley had requested that in order to assist his analysis, the previous quantities of samples, set out by McHardy in his memorandum of 1879, be increased, in many cases considerably. Pooley's request again emphasises the difficulty of balancing conflicting requirements; that is the analyst's need for sufficient quantities to work on and the need for inspectors not to alert shopkeepers of their identity by requesting an abnormally large quantity of goods.[93] In this letter to McHardy, Pooley further requested that, as he would 'personally' be testing the samples, inspectors should not send them in 'large batches' but 'evenly distribute them during the quarter'. While Pooley did stress that 'no time should

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[92] Essex, 1883-1888, TNA, MH 30/74, Annual Report, 1886.

[93] These quantities with the original quantities in brackets are: one pint of milk (half a pint), one third of a pound of butter (three ounces), four ounces of tea (two ounces) two ounces of pepper (half an ounce). Copy of letter from Pooley to Admiral McHardy, Memorandum No. 90. ERO (Chelmsford), J/P/8/1 MS 1881.

be lost' delivering perishable articles such as milk and cream, it has to be noted that trying to 'evenly distribute' samples is perhaps not the best way of determining accurate adulteration levels.[94] In 1888 in a letter to William Poyntz the Chief Constable, Pooley requested yet another change in the quantity of sample inspectors were to purchase. In this memorandum Pooley clearly states that the quantities of samples are those needed for *analysis*, therefore three times the quantity needed to be purchased, one third to be returned to the vendor, one third for the inspector and one third for the analyst. However, this fact was often not made explicit and combined with so many directives changing the quantity of sample to be purchased, it would be surprising if inspectors did not become very confused over this issue.[95]

For most years, and in common with the rest of the country, milk formed the largest percentage of samples collected and analysed in Essex. Some years it would be more than double, or even treble, the number of other samples. As the following graph shows, in 1881 rates for milk adulteration within the county at 39.6 per cent were over twice that for England and Wales (19.5 per cent). After this particularly high level, rates for milk adulteration in Essex followed a similar trend to general adulteration rates, gradually falling but always higher than the national average until the end of the century when rates were very similar, (1901 England and Wales 11.2 per cent. Essex 11.3 per cent).

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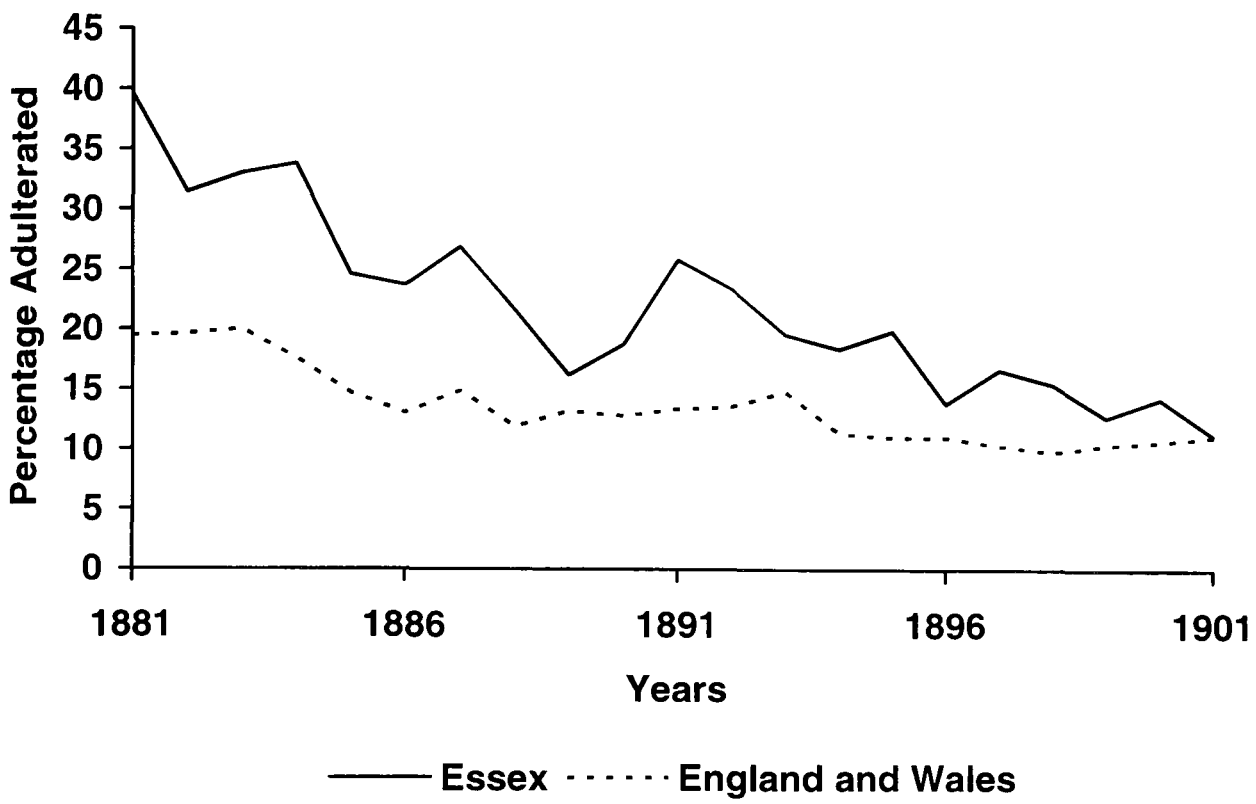
[94] Memorandum No. 90, 1881, ERO (Chelmsford), J/P/8/1, 1840-1881.

[95] These quantities with total quantities in brackets are: one-third of a pint of milk (one pint), two and two-thirds ounces of butter (eight ounces), two and two-thirds ounces of tea (eight ounces), one and one-third ounce of pepper (four ounces). General Orders Issued by Chief Constables 1885-1893, Order 478, 4 August 1888, ERO (Chelmsford) J/P/7/1. This memorandum from the Chief Constable encloses a letter from Pooley setting out his new requirements.



Percentage of milk samples found to be adulterated. Essex compared to all of England and Wales. Source: LGB Annual Reports 1881-1901.

In his discussions on milk adulteration, P.J. Atkins has noted that by the end of the nineteenth century, there were 'three clear patterns' where adulteration was occurring with one of these areas being in 'an axis of counties running from the south coast, through London to East Anglia'.[96] While his statement suggests that milk adulteration was indeed higher in counties such as Essex, Atkins basis his findings on figures for milk adulteration given in the LGB annual reports. While these figures allow a comparison to be made between various areas of the country, they do not show variations that occurred within counties. It was only later in the century that the LGB gave a more comprehensive breakdown of this

[96] Atkins, 1991, p. 331.

information. Within Essex, some early comparison is possible as most of the reports submitted by Thomas Pooley give a detailed breakdown of adulterations found, and areas of the county where they occurred. It is clear from these reports that the largest percentage of milk adulteration was found in urban areas of the county. In the first quarter of 1883, twenty-one samples of milk were found to be adulterated within the county, but twelve of these came from the Metropolitan Police District of Essex.[97] The LGB continually drew attention to the high frequency of milk adulteration in urban areas and in 1891 identified West Ham as a particular offender. Here milk adulteration was 61.9 per cent compared to the overall Essex county rate of 25.9 per cent.[98]

Many factors that could account for higher rates of adulteration in more urban areas have been discussed already. In addition, the urban setting attracted a greater number of itinerant milk-sellers who frequently provided poor quality milk hoping they could quickly move areas if inspectors became too vigilant. P.J. Atkins also discusses another factor that may have contributed to higher rates of milk adulteration in the urban setting. In the 1890s, there were four years when hay production was below average which affected milk yields. As a result demand outstripped supply.[99] Given the greatly expanding population in urban areas of the county, this could have led to increased adulteration and may explain the increase in Essex adulteration rates between 1894 and 1896 as seen in the graph on page 297.

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[97] March 1883, TNA, MH 30/74.
[98] This rate was also higher than areas bordering on West Ham. For example, in Mile End milk adulteration was 10.8 per cent and in Poplar 15. 6 per cent. *Twenty-first Annual Report of the Local Government Board,* 1891, (C. 6745) XXXVIII.
[99] Atkins, 1991, p. 327.

In his reports to the LGB, Pooley frequently expressed concern about the lack of agreed standards for milk. He felt that analysts were having to take as their standard of purity 'the poorest produce of a healthy cow' and as a result, 'this low standard allows the dealer in many cases to add a considerable amount of water without bringing the milk of good average quality below the standard usually adopted'. According to Pooley milk was frequently sold with thirty per cent added water while fifty per cent was not uncommon.[100] Because of this, as Pooley noted in 1881, the official figure for milk adulteration did not give a reliable indicator of the extent of the problem.[101] Even by the early 1890s, confusion over standards for milk continued to cause problems. In 1892, Pooley observed that although milk adulteration was declining, official figures 'scarcely represent the full scale of this sophistication...'. As he notes, a number of samples passed as 'genuine' were 'suspicious' but because of the problems of standards and natural variations 'I had to give them the benefit of the doubt'.[102] Once again uncertainties over this issue meant that many adulteration offenders were escaping prosecution while the true level of milk adulteration was not being accurately recorded.

In 1890, Pooley calculated that if each individual in the county consumed half a pint of milk per day, the monetary value of all milk consumed in the county would be £600,000 per year. With a rate of 17 per cent adulteration — the figure for the March 1890 quarter — Pooley estimated that the public were paying £12, 250 for

[100] TNA, MH 30/73, MH 30/74.
[101] June 1881, TNA, MH 30/73.
[102] June 1892, TNA, MH 30/75.

water instead of milk.[103] Pooley also observed that when this 'germ laden water' was added to milk, it 'putrefies and decomposes' far more rapidly than genuine milk.[104] This was an important observation as some Essex milkmen prosecuted for adulteration offences argued so vigorously over technicalities in the 1875 Act that the matter was eventually referred to the Excise Chemists for another opinion. Often these disputes would take some considerable time. As a result, by the time the milk eventually arrived at Somerset House it was in such an advanced state of decomposition that it was impossible to analyse. It would seem fair to suggest that by requesting a second sample analysis in this way, some milkmen were adopting a very convenient ploy to evade prosecution. [105]

The 'germ laden' nature of Essex water had featured some years earlier in the 1875 report of the MOH for Brentwood. Visiting a farm in the area where the farmer was suspected of adding water to milk, the MOH found the owner milking a cow into a 'vessel which resembled a filthy pigs' bucket'. The water tap on the premises was found to contain sewage and was so bad 'it didn't need analysis as there was evidence of animal life'.[106]

In common with other analysts, Pooley expressed the opinion that high levels of milk adulteration occurred because fines were so small and were no deterrent to a milk-seller who could make large profits by simply adding water to milk. He felt

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[103] March 1890, TNA, MH 30/75.
[104] June 1881, TNA, MH 30/73.
[105] Annual Report, 1884. TNA, MH 30/74.
[106] Second Annual Report of Cornelius Fox, Medical Officer for Sanitary Districts of Maldon, Chelmsford and Billericay, 1875. TNA, MH 30/73.

that unless this issue was addressed, milk adulteration within the county would continue to be a significant problem.

Prosecutions and Convictions

The low fines imposed by magistrates for adulteration offences caused public analysts a great deal of concern and was a subject frequently debated by the SPA. Speaking in 1892 Otto Hehner, President of the Society, raised the issue once more:

> At present the main obstacle to the full carrying out of the Food Act are magistrates, especially London Magistrates. To read of penny fines for a gross deception of the public; to see excuses admitted, with magisterial benevolence, as must be uttered by offenders with tongue in cheek...[107]

Records from Chelmsford Petty Sessions confirm that fines for adulteration offences imposed by magistrates in this part of Essex were similarly low. In 1884, in a case of milk adulteration in which Pooley was asked to give evidence, the milk-seller was fined just £1 plus 10s costs. In many cases the costs exceeded the fine.[108] In 1885 a shopkeeper was prosecuted for mustard

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[107] *The Analyst*, 1892, **17**, p. 21.
[108] Chelmsford Petty Sessions Records, ERO (Chelmsford), P/C M1/29.

adulteration and fined just one shilling plus 8s 6d costs, while in 1887 a milk-seller convicted of adulteration was fined 5s plus 8s costs.[109]

Thomas Pooley commented on the issue of low fines many times and noted that it seemed absurd that, in some cases, fines for milk adulteration were even less for a second offence than the first. In 1882 an Essex milk-seller convicted of adulteration was fined £5 for the first offence but only half this for his second offence.[110] These low penalties simply encouraged milk adulteration and the records show that some milk-sellers were being convicted for a third and fourth offence. While there are examples where milk-sellers in Essex were fined sums up to £7, an average amount was nearer £2 to £3. The LGB also consistently endorsed the view that, in general, fines for milk adulteration were far too low and in the Annual Report for 1894, noted that with a total number of 2,030 samples of milk found to be adulterated, legal proceedings had been taken in only 1,305 cases. While there were a few fines of £5, in 150 cases fines were of 5s or less and a number at 6d each.[111] In Essex for 1882, 60 convictions for all adulteration offences produced fines which amounted to £127 10s 0d, or roughly £2 2s 0d per fine; in 1890 the 70 convictions produced a total of only £44 5s 6d in fines, an average of just 12s 6d plus costs for each offence. As Pooley noted in 1890, this 'scarcely seems sufficient to act as a deterrent'.[112]

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[109] Chelmsford Petty Sessions Records, ERO (Chelmsford), P/W M1/30, P/C M1/31.
[110] Annual Report 1882, TNA, MH 30/74.
[111] *Twenty-fifth Annual Report of the Local Government Board,* 1895-1896, (C. 8212) XXXVI.
[112] Annual Report, 1890, TNA, MH 30/75.

While Thomas Pooley gives a breakdown of prosecutions and convictions within Essex from 1882, this information was not found in other county records at this time. Within Essex, the reporting of this information had been made a requirement in 1882 by the Essex Court of Quarter Sessions, who requested that the inspectors collecting samples notify the county authorities of the outcome of any proceedings. From 1882, the returns submitted by Thomas Pooley give information on prosecutions and convictions. Including these figures would seem to have been a decision on the part of the Essex authorities as the LGB did not make this a requirement of all county authorities until 1887. In the first LGB report to contain this information, the Board noted that average fines throughout the country were £1, which was considerably lower than fines in Essex at this time which averaged £2.[113] While the LGB requested this information from all authorities from 1887 many disregarded the Board and it was several years before a comprehensive picture of convictions and prosecutions throughout the country could be obtained.

In 1882, within Essex, 97 samples were found to be adulterated and of this number 60 offenders were convicted.[114] In this report as in others, it is not clear just how many prosecutions took place once samples were found to be adulterated. In 1886, with 76 samples adulterated the proportion of convictions to adulterated samples is slightly improved with 50 convictions. How these rates compared with the rest of the country is more difficult to assess. While the LGB began to publish this information from 1887, it is not always clear exactly what

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[113] *Seventeenth Annual Report of the Local Government Board,* 1887-1888, (C. 5526) XLIX.
[114] TNA, MH 30/74.

percentage of prosecutions resulted in convictions. For example in 1888, while the Board states that 1,815 samples were found to be adulterated and there were 1,337 prosecutions with fines of £1,782, it is not clear how many actual convictions were obtained.[115]

In his quarterly reports, Thomas Pooley gives a variety of reasons why prosecutions in Essex failed to result in a conviction. These illustrate how the analyst at local level was aware of various constraints within the Act which allowed those guilty of adulteration to escape prosecution. He reports some instances where samples had not been obtained in accordance with the requirements of the Act. In others, the adulteration was slight, while in many cases he simply reports 'no proceedings taken' with no other explanation.[116] Pooley also drew attention to the many confusing legal technicalities in the Act which made prosecutions difficult. In some cases defendants would say they only sold the article as supplied to them from the wholesaler and in these cases the 'Justices take a lenient view or dismiss the case'.[117] In other cases, shopkeepers, in an effort to avoid prosecution, would accuse inspectors of substituting samples. Within Essex, there was some attempt to guard against this. In 1888 inspectors were supplied with individual seals, used for sealing samples, inscribed with the identifying number of the weights and measures district the inspector was working in.[118]

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[115] *Eighteenth Report of the Local Government Board,* 1888-1889, (C. 5813) XXXV. TNA MH 30/75.
[116] TNA, MH 30/74.
[117] March 1893, TNA, MH 30/76.
[118] General Orders issued by Chief Constables, Order 472, ERO (Chelmsford), J/P/7/1 1885-1893.

The Chelmsford Petty Sessions records also illustrate some of the difficulties experienced by inspectors when collecting samples. In 1883, a milk-seller refused to take his portion of the sample once the inspector had told him it was for analysis. Despite this, the inspector's sample was delivered to Pooley, who found it to be adulterated; the milk-seller was subsequently fined 10s plus 8s costs.[119] In a similar case in 1884, the milk-seller also refused to take his portion of the sample. This was later found to be adulterated and he was fined £1 plus 10s costs.[120] These records also illustrate some of the more amusing aspects of these cases. In 1883, following analysis of the sample by Pooley, a publican was charged with supplying brandy 'under proof'. Cross examined, the defendant is alleged to have said 'I should have tested it before I put the water in'. He was fined £2 plus 9s costs.[121]

By the end of the nineteenth century adulteration rates in the county of Essex, appeared to show a definite decline and by 1900 were very similar to average rates found in England and Wales.[122] Thomas Pooley expressed some optimism about these declining levels and the general standard of food now to be found in the county. While he continued to express some concern about levels of milk adulteration, particularly in urban areas, he felt confident enough to declare in his annual report for 1895 that the public were now 'cheated rather than poisoned'.[123] The 1874 Select Committee on Adulteration of Food Act (1872) had

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[119] Chelmsford Petty Sessions Records, ERO (Chelmsford), P/C M1/31.
[120] Chelmsford Petty Sessions Records, ERO (Chelmsford), P/C M1/29.
[121] Chelmsford Petty Sessions Records, ERO, (Chelmsford), P/C M/1/29.
[122] In 1900 adulteration rates in Essex were 9.5 per cent and for the rest of England and Wales 8.8 per cent.
[123] Annual Report 1895, TNA, MH 30/77.

INNOCENCE AT THE BAR.

Police Superintendent (*in plain Clothes*). "WELL, MY LASS, I MAY JUST TELL THEE THAT THIS WHISKEY IS GOING TO BE ANALYSED."

North Country Barmaid (*innocently*). "I'M CERTAIN IT'LL NIVER DEE FOR THAT!" *Police Superintendent.* "WHY?"

Barmaid. "B'CAUSE IT'S NEARLY ALL WATTER!"

***Punch*, 18 May 1878.**

As court records indicate, verbal exchanges such as this between the inspector and vendor were not uncommon.

reached the same conclusion some twenty years earlier. Pooley did add that if the public were still being 'cheated' by adulteration this was occurring 'less frequently than a few years ago'.[124] However, while the use of harmful adulterants was less prevalent Pooley, like other analysts, expressed some caution about making too optimistic an assumption on the adulteration issue. The 1875 Act remained inadequate in many areas and Pooley expressed some hope that new legislation, being considered at this time by the Select Committee on Food Products Adulteration, would address these issues.[125] In 1897 he addressed these concerns to Essex County Council and urged their support in the matter:

> Several County Councils have passed resolutions urging the Government to frame a Bill more in consonance with the recommendations made by the Select Committee after ample enquiry, and I respectfully submit that if the Essex County Council would adopt a similar course it might help in placing a more efficient Act on the Statute Book for ensuring a supply of pure food to the people.[126]

This pro-active approach was typical of Pooley who would continue to serve as Public Analyst for Essex until 1904. His twenty-three years in office spanned one of the most important periods in the history of food reform. During this time Pooley's diligence in implementing the 1875 Act did much to further the cause of

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[124] *Select Committee on Adulteration of Food Act (1872),* 1874, (262) VI, p.iii.
[125] *Select Committee on Food Products Adulteration,*1894, (253) XII.
[126] Annual Report 1897, TNA, MH 30/77.

food reform within the county of Essex. His detailed reports give a valuable insight into the local implementation of the 1875 Sale of Food and Drugs Act and the problems encountered by a nineteenth-century public analyst.

Summary

As this chapter has demonstrated, implementing the 1875 Act at local level and ensuring it was administered effectively was a difficult process. Many of the constraints raised in this chapter, and often illustrated first-hand by the Essex analysts and inspectors, were issues that have been identified and discussed throughout this thesis. Local authority inertia on the adulteration issue and in some cases outright opposition to reform proposals were clearly demonstrated within the county. Low fines for adulteration offences imposed by Essex magistrates mirrored the tolerant reaction of magistrates around the country to this offence. Combined with the lack of official standards, especially for milk, and the problem of inspectors being recognised these constraints hindered effective implementation of the 1875 Act within Essex, as in other areas.

This chapter has also shown that local officials, such as inspectors and analysts, were themselves frequently unsure about their role implementing a complex piece of legislation. As a result it is not too surprising that mistakes and inaccuracies occurred. On a practical level this was of some relevance when it came to the accurate recording of statistical information on adulteration. As mentioned in the last chapter, many of the records submitted by analysts to

county authorities were often sketchy and poorly written. While the Essex analyst Thomas Pooley's records are on the whole orderly and clearly written, even here mistakes and inconsistencies do occur. With large amounts of statistical information on sample collection and analysis submitted to the LGB from around the country for publication in the Board's annual reports, it is possible that in some cases this information may not always have been entirely accurate.[127]

While some local authorities were clearly opposed to the idea of more central control and resisted implementing adulteration legislation, for others this was not the case. Examining many of the local council records within Essex, it would seem that for many it was less a question of outright opposition to the Bill, or monetary concerns — though of course this was always a major consideration— but more to do with uncertainties and confusion as to their responsibilities under the 1875 Act. Unfortunately, as was the case with the West Ham Board, these misunderstandings often had damaging long-term effects on the way the Act was implemented and on the control of adulteration within these areas.

Available statistics indicate that by the end of the century within Essex, as in the rest of the country, adulteration levels appeared to be much lower than they had been twenty years earlier. However, as this chapter has shown, for those administering and executing the Act at local level many of the constraints that

[127] In 1892 Pooley inadvertently submitted annual returns for the year 1891, a mistake noted by the LGB. No annual report from the Essex analyst for 1892 appears in the LGB records at The National Archives. In some years tabular totals appear in the analyst's records and these would appear to be returns that were eventually submitted to the LGB. Many of these tabular returns contain a great number of crossings out and corrections, and in some cases numbers of samples collected or adulterations found do not tally with the analyst's own report. From 1885 the annual reports from the Essex analyst were typed, together with some quarterly reports from 1895. This made mistakes in interpretation less likely. Essex 1893-1895, TNA, MH 30/76.

hampered effective implementation still remained. The comprehensive records kept by Thomas Pooley provide the detailed local information to support more general evidence which indicates that the 1875 Act was not entirely effective. As a result many adulteration offences continued to occur and went unrecorded and unpunished. For this and other reasons mentioned in this chapter, it would seem fair to suggest that official statistics provide a somewhat optimistic assessment, rather than an entirely accurate picture of changing levels of adulteration at this time.

Summary and Conclusion

In 1898, and almost twenty-five years after the introduction of the 1875 Sale of Food and Drugs Act, the body responsible for overall administration of the Act, the Local Government Board, expressed some satisfaction that this legislation had been successful. With official statistics showing adulteration levels to be half those of 1877 the Board seemed optimistic that adulteration was finally under control.[1]

This optimism was in great contrast to the pessimistic forecasts surrounding the subject a century earlier. That pessimism had been reinforced by many of the eighteenth and early-nineteenth-century publications on adulteration. Often highly emotive and sensational in style these publications provided little reliable evidence to indicate the extent of the adulteration problem. It was not until *The Lancet* investigations of the 1850s that many of the more dramatic and exaggerated claims could be replaced by a more scientific and quantitive assessment of the problem.

The Lancet investigations of the 1850s provided a more reasoned analysis of the adulteration problem and, importantly, also gave the reform movement, spearheaded by medical activists, added backing to increase agitation for

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[1] In the Annual Report for 1898-1899 the Board noted that the proportion of adulterated samples was 8.7 per cent. 'This is the lowest percentage of adulteration which we have recorded, and is less than one-third of the rate for the years 1877 and 1878'. *Twenty-eighth Annual Report of the Local Government Board,* 1898-1899, (C.9444) XXXVII, p.cxxxiii.

reform; agitation that would result in the first government enquiry into adulteration, the Select Committee of 1855. Far from agreeing a clear legislative solution to the problem, this committee highlighted the diversity of views on the adulteration issue with each group wishing to see a resolution in line with its own interests. This was particularly true of trade representation whose overriding concern was that any solution should not compromise *laissez-faire* principles. In an attempt to accommodate so many rival interests, it was inevitable that the first adulteration acts of 1860 and 1872 were compromises that did little to address the real issues. General discontent that adulteration was not being addressed led to a second Select Committee in 1874. Once again this committee demonstrated how sectional interests, now including public analysts as well as the medical profession and the business community, were all anxious to voice their individual demands as to how legislative reform should eventually be fashioned.

While the resulting legislation, the Sale of Food and Drugs Act 1875, was in many ways shaped to accommodate these clamorous demands, and therefore also had an element of compromise, it none the less appeared to contemporaries to provide a more workable structure for the control of adulteration. However, several weaknesses soon became apparent, shown most clearly at the local level. The Act's failure to make the appointment of public analysts compulsory was a major omission. The Local Government Board, as the central administrative body charged with overseeing implementation of the Act, lacked legislative power to perform this role effectively. Also, in what should have been a positive development, the formation of a reference body to settle

cases of disputed analyses became instead the setting for professional disputes between the chemists of this department and public analysts. These disputes did little to enhance the professional reputation of either group and, at least in the initial years, the reference system failed to assist in the control of adulteration; the very function for which it had been created.

However, the major weakness in the 1875 legislation was the delegation of responsibility for daily implementation of the Act to local authorities, aggravated by the lack of effective central direction to these bodies from the LGB. While this move reflected prevailing government policy to increase local responsibility, for the control of adulteration it proved to be a major stumbling block. As was seen in the county of Essex, with local bodies anxious to preserve their autonomy and the LGB anxious, but often powerless, to enforce adulteration directives on them, tension between the two sides was often evident. To resolve this many local authorities resorted to a policy of masterly inactivity on the adulteration issue, seen most clearly in their failure to appoint public analysts or inspectors to collect food samples. Eventually, the Sale of Food and Drugs Act 1899 would address these issues and place a mandatory requirement on local authorities to appoint public analysts and apply the Act once they had been appointed.[2]

Where local authorities did implement the 1875 Act, the dominance of members with business interests may well have restricted the implementation of effective policy to control adulteration. As a result, in cases where public analysts and

[2] Sale of Food and Drugs Act 1899, (62 & 63 Vict. c. 51), s. 3.

inspectors *were* appointed, their role was likely to be limited. Records indicate that on occasions inspectors were directed by their employers to take samples at specific times and places and these details were then published beforehand in the local press. Clearly this was not an efficient method of sample collection nor did it give a reliable indication of adulteration levels.

Other constraints on the sample collection process were equally important. Of most concern was the fact that inspectors were frequently recognised; as a result they were not given samples of food that truly represented those sold to the general public. Records show that this occurred in many areas and would have invalidated the whole sample collection process and the results based upon it.

Other constraints such as limited manpower meant that, in many areas, shopkeepers could be confident they would receive only an occasional visit from an inspector. Anomalies and omissions in the law such as the failure to outline a definition of 'adulteration' and the lack of official standards presented analysts and others with many difficulties. There was also a great deal of confusion over many other issues such as what constituted a 'mixture' or what was meant by the term 'injurious to health'. Because of these legal uncertainties, many prosecutions could not be substantiated when cases came to court and as a result many adulteration offences went unrecorded and unprosecuted. Even in cases where offenders were convicted, the low fines imposed by many magistrates did little to signal their concerns on the adulteration issue or act as a deterrent to would-be offenders.

The many courtroom debates on seemingly minor technicalities of the law, illustrated the complexity of the adulteration issue. It is not surprising that such technicalities, which sometimes even puzzled courtroom lawyers, should have been so confusing to many of those implementing the Act at local level. Most inspectors were without training and, at least initially, were also without the organised, professional support of colleagues. For inspectors and public analysts, the development of professional associations did much to correct this. These organisations, in particular the SPA, provided an active voice to draw attention to the many deficiencies of the Act, so apparent to those working at local level, and a platform from which to agitate for food reform.

This in-depth focus on local implementation of the 1875 Sale of Food and Drugs Act has revealed many constraints that hindered effective implementation. In particular it has identified numerous weaknesses in the sample collection process. Sample collection was fundamental to the success of the 1875 legislation. It was also fundamental in providing information for official adulteration statistics. Concerns over this process, and other constraints highlighted in this thesis, have to be considered in relation to these figures and the optimism based upon them as expressed by the LGB at the end of the century. They also have to be considered in relation to the existing literature on the adulteration issue and the views expressed there as to the effectiveness of the 1875 legislation. In general, historians such as John Burnett, Anthony Wohl and E.J.T. Collins see the 1875 Act as an effective measure that reduced

adulteration and base their conclusions upon official adulteration statistics collated and published by the LGB.

However, the in-depth analysis of the local implementation of the 1875 Act provided by this thesis, confirms the findings of historians such as Peter Atkins who highlighted issues that the Act failed to address. Low fines, the lack of official standards and other problems made adulteration, and milk adulteration in particular, such a difficult practice to curb. Inadequacies with sampling procedures identified by Michael French and Jim Phillips, have been further explored in this thesis and new areas of concern identified that again suggest that official statistics on adulteration may not be entirely reliable.

While this study suggests that the effectiveness of the 1875 Act may not be accurately reflected in official statistics, the Act was not entirely ineffective. Following implementation, the number of public analysts and inspectors increased as did sample collection and analysis. There was increased public awareness of adulteration with all aspects of the issue widely reported and discussed in newspapers, books and journals. Public analysts, such as Thomas Pooley in Essex, appeared to make every effort to implement the Act effectively. Further research into the activities of other public analysts could provide valuable information on the implementation of the Act at local level, especially if the findings were compared to Pooley's work.

Other factors that may have contributed to a reduction in adulteration also have to be considered. As the century progressed, manufacturers began to press for tighter controls on adulteration. Initially these may have been to protect their interests from foreign competition, however a side effect was an increasing interest in promoting products in a positive way and advertisements claiming food items to be 'pure' or 'free from adulteration' became common.[3] Also, as the 1896 Report from the Select Committee on Food Products Adulteration indicated, by the end of the century there was far more agreement from the various interest groups that adulteration did indeed need some form of government control and debates now centred on how this could best be achieved.[4] The professionalisation of groups involved in the adulteration issue also contributed to changing attitudes. As Ingeborg Paulus notes, the softening of attitudes towards adulteration legislation was aided by groups such as public analysts who had 'transformed their reform image into one of professional competency', as a result there was less 'opposition to their tasks'.[5]

While the primary focus of this thesis has been local implementation of the 1875 Sale of Food and Drugs Act, it has drawn attention to many other aspects of the adulteration issue that would be worthy of further study. The adulteration of drugs as well as the supply of adulterants and how these were obtained, are both areas that would merit further research. The local study in this thesis focussed only on the county of Essex, research into the implementation of

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[3] Many of these advertisements appeared in national newspapers as well as journals such as *Food, Drugs & Drink*, **1**, 24 December 1892.
[4] *Report from the Select Committee on Food Products Adulteration*, Final Report, 1896, (288) IX.
[5] Paulus, p.120.

adulteration legislation by other local bodies, might provide interesting comparisons for analysis and discussion. Similarly, further research into local board records, as well as an in-depth analysis of the composition of local councils, might reveal the extent to which tradesmen on these local bodies actively opposed the implementation of adulteration legislation, or influenced the sample collection process. Local newspapers are a valuable historical source and further research in this area would provide additional information to support and enhance the national picture on adulteration. A particularly interesting research project for the future would be a detailed investigation of the little-known Anti-Adulteration Association.

Hitherto, detailed analysis of the local implementation of the 1875 Act, on which its effectiveness hinged, has been overlooked. This has been provided by this thesis and findings indicate that local implementation, and therefore the 1875 Act, was only partially effective. This suggests that official nineteenth-century statistics may not present an entirely accurate picture of changing adulteration levels. Further research in the areas discussed would contribute to, and enhance, our understanding of this important legislative measure and further inform our assessment of its contribution towards Victorian food reform.

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